The Mining Journal
AND ATMOSPHERIC RAILWAY GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 538.—Vol. XV.] LONDON: SATURDAY, DECEMBER 13, 1845. [Price 6d.

LEAD MINES, AT STRONTIAN, ARGYLLSHIRE.—TO BE LET, for such a number of years as may be agreed upon, the well-known and valuable LEAD MINES, in the neighbourhood of Strontian. A level, or adit, which has been in progress for many years, has lately been driven into a mine of great extent and rich in ore, by which the water has been cleared out and a convenient access given to the works. These mines are in the vicinity of Loch Sunart. The neighbourhood is inhabited by a thriving and industrious population, of good moral character, among whom are many skilful miners. There is a smelting furnace and a crushing-mill near the entrance to the level, and an abundant supply of water—with these advantages the work may be begun without delay. As few mines possess a more extensive field for successful speculation, they are well worthy the consideration of capitalists, who are hereby invited to visit them.—Offers will be received by Sir James Miles Riddell, Bart., and by William Kennedy, Esq., factor, Strontian.—Strontian, *Nov.* 27, 1845. 1

IRON FOUNDRY.—TO BE SOLD, BY PRIVATE CONTRACT, the HELEN IRON WORKS, situated at the mouth of the TWEED, nearly opposite Berwick-upon-Tweed. These works, erected in 1839, have been built in the most substantial manner, and are replete with every convenience for carrying on a large foundry, or engineering business. They stand upon an area of 7000 square yards, and consist of large MOULDING SHOPS, in which are two cupolas, capable of melting eight tons of iron per hour; three powerful cranes, under which castings of from ten to twenty tons weight can be made, and nine smaller cranes for lighter work; TWO STEAM-ENGINES, of 6 and 12-horse power each, which drive two blowing machines, one large self-acting lathe, and boring mill; five smaller lathes, loam mills, drilling and screwing machines, saw-mill, and other machinery.

These works are abundantly supplied with water, carried in pipes through every part of the premises, and the whole are lighted with gas. 2

Along with the works will be SOLD the IMPLEMENTS and MATERIALS, which, as they have been lately used, are in complete working condition, and are of the most approved construction; they consist of nearly 300 tons of CAST and MALLEABLE IRON MOULDING FLASKS, core bars, and patterns, adapted for almost every description of foundry work, including castings for steam-engines, gas and water-works, railways, gas, steam, water and hot-water pipes, pots, grates, chests, rain-pipe and guttering, and an immense variety of ironmongery goods; also a great quantity of other implements and materials used in a foundry—viz: hand and crane ladles, trucks, carriages, crabs, weighing machines, blacksmiths' and moulders' tools, &c.

The sale of these works affords an excellent opportunity to the capitalist desirous of embarking in this business, inasmuch as the time is peculiarly favourable, and the works could be put in operation in the course of a few days, while the purchaser could secure a business connexion which has existed with the present proprietor and his predecessors for nearly fifty years.—They have been in active operation since their erection, during which time from 50 to 120 tons of castings have been made per week; they are, however, capable of turning out more than double this last quantity. The goods manufactured at these works have been principally for the London, North American, and West Indian markets, as well as the local trade, for all which, as well as the continent, they are conveniently situated, being only about 400 yards from the Tweed, where vessels receive and discharge their cargoes. Freights are very moderate; there is a weekly communication with London by steam and sailing vessels; labour is about 25 per cent. less than in most parts of the kingdom, and coal can be obtained in abundance within a mile of the works at low prices. The Newcastle and Berwick Trunk Railway passes within three hundred yards of the works, thus affording communication to all parts of the kingdom; and as the North British and other railways have their common termini at Berwick, all of which will require an immense quantity of iron, a large local demand will be thus created, as well for their first construction as afterwards, and as affording access to Northumberland, Berwickshire Roxburghshire, in which are many large and daily increasing manufacturing towns.

It may be observed, that the iron trade of this country never presented appearances of more permanent prosperity than at present. However much iron may have been used for almost all purposes hitherto, the quantity falls into insignificance in comparison to what will shortly be required, it being ascertained that there are upwards of 40,000 miles of *bona fide* railways projected in Europe, India and the colonies; and each mile requiring 600 tons of iron, it may be calculated, with the utmost confidence, that there will be 24,000,000 tons of iron wanted during the next seven or eight years for railway purposes alone, and which may be taken in excess over the usual requirements of the country. There will be nearly 180,000 tons of iron required for railways alone within a distance of 40 or 50 miles of Berwick, and as there are only four or five small foundries in this district, a great portion of the castings might be manufactured at these works.

Plans of the works, with an inventory of the implements and materials, may be had on application to David Macbeath, Berwick; J. B. Gallie, iron merchant, Edinburgh; Bankier and Mackenzie, iron merchants, Glasgow; Joseph Hubback, Liverpool; Coxwell and Cresar, Newcastle-upon-Tyne; and Robert Guthrie, 11, Cornwall-crescent, Camden Town.

TO CAPITALISTS.—The ADVERTISER is in WANT of a CAPITAL of from FIVE THOUSAND to EIGHT THOUSAND POUNDS, in a MANUFACTURING CONCERN, yielding a good profit, with quarterly returns, and wishes to meet with ONE or MORE PARTNERS, either acting or otherwise, who can command that sum; or he will give security for a loan. Satisfactory references and full particulars can be given.—Address "U. C.," Post-office, Sheffield. 3

WANTED, a SECOND-HAND DOUBLE POWER STEAM-ENGINE, in good condition (without boilers), with a STEAM CYLINDER, of from thirty inches to thirty-six inches diameter. Apply, stating terms, by letter (post-paid), to "A. B. C.," Post-office, Newport, Monmouthshire. 4

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TO IRONMASTERS.—JOHN WATT, CIVIL ENGINEER, begs to inform IRONMASTERS that he has COMMENCED BUSINESS in GLASGOW, at No. 32, ST. ENOCH-SQUARE, and is now prepared to FURNISH PLANS, SPECIFICATIONS, and WORKING DRAWINGS, for all the ERECTIONS, MACHINERY, RAILWAYS, and general arrangements required for the several departments of an IRON-WORK, and to superintend the execution of the same. Twelve years' experience at several of the largest iron-works in Wales and Scotland, enables him to offer his services with confidence.

The advertiser will undertake to procure for parties at a distance STEAM-ENGINES, and every description of MACHINERY, of the best construction and on moderate terms.

Patentees of useful inventions, by forwarding drawings and descriptions of the same, will have them brought into notice in Scotland.

NOTICE TO THE PROPRIETORS AND SHAREHOLDERS OF MINES, SMELTING-WORKS, &c.

Messrs. MITCHELL and FIELD beg to inform the PUBLIC, that they have REMOVED from No. 5 A to No. 23, HAWLEY-ROAD, KENTISH TOWN, where they have erected a spacious LABORATORY, fitted expressly for the performance of all OPERATIONS CONNECTED WITH MINING.—Practical instruction to gentlemen in Assaying, Mineral Analysis, and Manufacturing Chemistry in general.

Assays and Analyses conducted as usual.

All communications to be addressed to Messrs. Mitchell and Field, assayers, No. 23, Hawley-road, Kentish Town. 7

THE PATENT SAFETY FUSE,

FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall. 8

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE for MACHINERY and AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public.

References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London. 9

UNDER THE PATRONAGE OF ROYALTY AND THE AUTHORITY OF THE FACULTY.

KEATING'S COUGH LOZENGES.—A remedy for all disorders of the pulmonary organs—in difficulty of breathing—in redundancy of phlegm—in incipient consumption (of which cough is the most positive indication) they are of unerring efficacy. In asthma, and in winter cough, they have been seldom known to fail.—KEATING'S COUGH LOZENGES are free from every deleterious ingredient; they may, therefore, be taken at all times, by the most delicate female and by the youngest child; while the public speaker and the professional singer will find them invaluable in allaying the hoarseness and irritation incidental in vocal execution, and consequently a powerful auxiliary in the production of melodious enunciation. 10

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SOUTHERN AND WESTERN MINING COMPANY OF IRELAND.

Registered Provisionally, and to be Incorporated under Letters Patent from the Queen.

No shareholder liable beyond the amount of his shares.

Capital £200,000, in 10,000 shares, of £20 each.—Deposit £2 per share.

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SECRETARY—William Connell, Esq., 90, South Mall, Cork

TREASURER—The Provincial Bank of Ireland, Cork 11

In laying before the public a prospectus of the Southern and Western Mining Company of Ireland, the provisional committee feel that no lengthened statement is required to create a full appreciation of the advantages which must be derived from the development of the mineral wealth of the southern and western districts of Ireland, which the most eminent authorities acknowledge to equal, if not exceed, in metalliferous deposits and mineral richness the most favoured mining districts in England.

Independent of the acknowledged abundance of ores, no country in the world presents to the miner greater facilities and advantages for working mines than those which present themselves in the southern and western portions of Ireland.

It is a well-known fact, that the mines in England, with few exceptions, are from their position incapable of being worked, and are seldom commenced without the aid of both steam and horse power, either of which occasions at once a large outlay of capital, and entails a heavy annual expense, which cannot be avoided, and yet, notwithstanding these heavy drawbacks, many of the Cornish mines, and those in other parts of England, are paying to the adventurers from £50 to £2000 per cent. on the capital invested. The prices of shares in the *Mining Journal* fully testify to this fact.

The proximity to the sea of the principal mines in the southern and western districts of Ireland, admits of the ores being shipped and the materials landed without incurring the heavy expense of inland carriage, to which all the mines in England are subject. The elevation of the setts above the sea level varying from twenty to fifty fathoms (and rising on the inland course of the lodes in many instances to 100 fathoms), affords opportunities of working effectively by means of deep levels, and renders quite unnecessary the expensive auxiliaries of either steam or horse power, while the "adits or levels" allow the water to flow off from the mine, and at the same time the ore and waste to be trammed out to the dressing floors. To any party acquainted with mining operations, these advantages will appear obvious, and will readily be admitted to be equal to a saving of from 20 to 40 per cent. in the working of mines, when compared with those which have not the advantage of similar position.

Under such favourable circumstances, while the mines of the southern and western portion of Ireland are admitted by the most eminent authorities to equal, if not exceed, the most favoured mineral districts in England, and aided, as ours are, by every natural facility for their development, together with a ready and abundant supply of surface water and cheap labour, is it not reasonable to expect that we shall have at least an equal return for the outlay of capital as is yielded by the most prosperous mines in England?

To the landed proprietors in the districts where operations are proposed to be carried on, the undertaking presents advantages that cannot be too highly appreciated. The circulation of capital, the extensive employment, the increased demand for agricultural produce, and the opening up of wild and hitherto unprofitable districts, must necessarily disseminate an extent of prosperity in which the proprietors of the soil will have a full and immediate participation.

It may, perhaps, be said by some parties that mining in Ireland has hitherto been a failure. Several mines have commenced without either experience to guide them, or capital to follow up the undertaking, and hence the failures that may be noted; but where capital has been applied under skilful and experienced mining agents and careful managers, the most marked success has resulted—witness the Berehaven and Knockmahon Mines. The Cosheen Mines, situated on Skull Harbour, in the west of the county of Cork, commenced work about six years ago, and has during that period sold at Swansea over £17,000 worth of copper ore, while the capital subscribed did not exceed £3500. The last small cargo from that mine sold on the 23d ult., produced a sum of £1089, or an average of over £29 per ton.

Professor Kane's invaluable work, *The Industrial Resources of Ireland*, fully corroborates the statements set forth in this prospectus, as to the value of the southern and western districts of this county in a mineral point of view.

The promoters of this important undertaking are determined by a careful supervision of the expenditure to insure that economical management so essential to the success and prosperity of the company, and which has already marked in so prominent a manner those mining operations in the west of this county, with which they have been individually connected. Since the preliminary announcement of the West Carbery and County of Cork Mining Company, now changed and registered as the "Southern and West Mining Company of Ireland," appeared before the public, applications have been received for over 8000 shares; an early application will, therefore, be necessary from those who propose to become shareholders, as the list will close on the 15th day of November next, when the allotment will take place.

Applications in the following form will be received by the solicitor, Thomas Jameson, Esq. No. 4, South Mall; or by the secretary, William Connell, No. 90, South Mall.

FORM OF APPLICATION FOR SHARES.

To the Provisional Committee of the Southern and Western Mining Company of Ireland.

Gentlemen,—I request you will allot me shares of £20 each, in the above undertaking; and I agree to accept the same, and pay the deposit of £2 per share thereon, or upon such number as you may appropriate to me, and to sign the necessary deeds when required thereon.

Dated this day of , 1845.

Name in full .....
Profession or trade .....
Place of residence .....
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Established Jan., 1819.—*Empowered by Special Act of Parliament*, 7 *and* 8 *Vic.*, cap. 48.

OFFICE—No. 10, CHATHAM-PLACE, BLACKFRIARS.

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This OLD ESTABLISHED SOCIETY has recently received ADDITIONAL POWERS, by Special Act of Parliament, and affords FACILITIES in effecting INSURANCES to suit the views of every class of insurers.

PREMIUMS are received yearly, half-yearly, or quarterly, or upon an increasing or decreasing scale.

Two-thirds of the profits are added septennially to the policies of those insured for life one-third is added to the guarantee fund for securing payment of the policies of all insurers.

The LAST BONUS under this provision was declared on the 27th day of June, 1845, being an additional bonus of 10 per cent. on all the premiums paid by the holders of policies of insurance for the whole term of life, with corresponding additions to holders of policies of endowment.

Those who are insured to the amount of £500 and upwards for the whole term of life, are admitted to vote at the half-yearly general meetings of the proprietors.

DAVID FOGGO, Secretary.

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ESTABLISHED 1834.

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MESSRS. LAMOND, SMALE, and LAMOND'S PUBLIC SALE OF RAILWAY SHARES, &c., are HELD, at the Hall of Commerce, Threadneedle-street, every TUESDAY and FRIDAY, at One o'clock precisely.—Orders received until Four o'clock of the day prior to sale.—London, Nov. 28, 1845. 19

NANT-A'R-NELLE. SILVER-LEAD MINES.

In 1000 shares, of £5 each.—Deposit £2 per share.

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P. P. Couch, Esq., Nant-y-Brian House.
G. Pell, Esq., Welford, Northamptonshire.
(With power to add to their number.)

SECRETARY—F. Macqueen, Esq., 5, Great Winchester-street, Broad-street.

These mines, in the parish of Celycwm, county of Carmarthen, South Wales, are held on lease for twenty-one years, of David Lloyd Harries, Esq., of Llandovery, and Edward Pryse Lloyd, Esq., of Glansevin, near Llandovery, at the moderate royalty of one-sixteenth. The neighbouring mine of Nant-y-Moyn, the property of Lord Cawdor, pays a royalty of one-eighth, which has returned a *very large surplus*, and is now working by Messrs. Michael Williams, of Scorrier.

The lease also conveys to the lessees all water-courses and roads, with power to convert and direct them—all slate, stone, clay, &c., for the use of the mines, in every respect free of charges, whereby the water from the lodes may be determined to a great depth below the deepest adit level; the ores crushed and made merchantable at little expense, there being convenient water-power for every purpose.

There are six veins already discovered within the limits of the sett, and found to be rich in lead ore of the best quality, producing, from assays made, 60 per cent. of lead and eighteen ounces of silver to the ton of ore, and 65 per cent. of lead and nineteen ounces of silver to the ton of ore. These mines were wrought by the proprietor of the lead, who, although unacquainted with mining, obtained from one of the veins near the top top of the mountain, by very limited operations, upwards of nine tons of siver-lead ore, which were sold to Messrs. Reddie and Co., of Bristol, at £12 ter ton, and about three tons were also sold to another company at £15 per ton.

The mountain being 1000 feet from the base to the summit, and the three main veins running parallel with the range of the mountain, which is 700 feet above the river at the base, and there being three caunter or cross veins, which at the surface are richly spotted with ore, it is intended to drive from the base an adit of about 150 fathoms long on the course of the caunter vein, which would cut through the whole of the veins at their several junctions, and thereby carry off the water, and exhibit their full resources, without the aid of machinery.

David Lloyd Harries, Esq., the part-proprietor of the freehold of these mines, not being willing to take upon himself individually the charge and expense of working them, and at the same time desirous to retain to himself a participation in the proceeds of so promising an undertaking, has leased the mines to certain individuals, for the purpose of establishing a working company, and has signified his readiness to take one-sixth portion of the concern; this fact bearing full testimony to his conviction that capital judiciously applied cannot fail to ensure success.

There are 600 shares only to be issued to the public, the remainder to be at the disposal of the lessees. 20

CONDITIONS.

All the transactions of the company are understood to be regulated by what is termed, in mining language, the "Cost-Book," and recognised among miners as founded upon that system.

That the capital of the company be £5000, in 1000 shares, of £5 each—deposit £2 per share; 10s. per share of which will be appropriated to the lessees, to defray their expenses in procuring grants, making surveys, and other incidental expenses; the remaining £1 10s. per share to be appropriated to the working of the mines, and future calls shall not exceed 10s. per share, and be made at intervals of not less than two months.

That all monies belonging to the company be deposited in the bank of Messrs. Denison, Heywood, and Kennard, to the credit of the company, in the names of the board of directors, and drawn therefrom by cheques signed by three of them, and countersigned by the secretary, in such sums only as will cover the current monthly costs, except as to sums especially voted by the board for the purchase of materials or machinery, &c.

Notice will be given in the *Mining Journal*, the *Times*, and local newspapers, when the instalments are to be paid into the banks of Messrs. Denison, Heywood, and Kennard, Lombard-street; and Messrs. Jones and Co., Llandovery, South Wales; and if not paid within the date of such notice, the shares shall be forfeited for the benefit of the general proprietary.

That a general meeting of the shareholders be held half-yearly in London, of which due notice will be given by the secretary, when all matters relating to the company's affairs will be detailed.

That the affairs of the company be under the superintendence of the above directors, provided they hold the necessary qualification; and that one-third of the whole directors shall go out of office at the end of the second and every subsequent year, but shall be eligible for re-election. The qualification for a director shall be twenty shares.

That no shareholder shall be liable for any amount beyond his or her respective shares.

That voting by proxy to a shareholder be allowed, and that every five shares shall entitle the holder to one vote, and no person to hold more than one proxy.

That the mining operations, and the general matters appertaining to the company's interest in the mines, be conducted by the lessees, who alone shall be responsible for all debts contracted.

That the secretary shall keep a register-book, wherein he shall enter the name and abode of each proprietor, and the number of his or her shares; and in case of sale or transfer, the seller shall send to the secretary the number of the scrip so sold or transferred, with the proper address of the purchaser, and every share not so registered will not be recognised by the company.

The reports of the agents of the mines, and the books of the company, shall be open to the inspection of the shareholders at all reasonable times, at the office, on application to the secretary.

Purchases of materials shall be made for ready money, in order to exempt the shareholders from all liability.

A general meeting of the shareholders may be called at any time by a requisition, signed by shareholders holding not less than one-fifth of the whole number of shares, addressed to the secretary, at the offices of the company.

Applications for shares to be made to the lessees, Messrs. Couch and Pell, at the Nant-y-Brian and Trawsnant Mines, near Llandovery, South Wales; F. Macqueen, Esq., No. 5, Great Winchester-street, Broad-street, London—the offices of the company; and to Messrs. Kiss and Son, Solicitors to the company, Fen-court, 125, Fenchurch-street—of whom prospectuses may be had, also at the *Mining Journal* Office, 26, Fleet-st., London.

OFFICE FOR PATENTS, 7, STAPLE INN, HOLBORN.

J. MURDOCH (successor and late assistant to Mr. Hebert) informs INVENTORS and PATENTEES, that at his OFFICE they can obtain 21

REFERENCE TO A CLASSIFIED LIST OF PATENTS (THE ONLY ONE EXTANT), which shows at one view all the Patents ever granted for any particular object, whereby they may save much trouble and expense, and procure information not otherwise obtainable. BRITISH and FOREIGN PATENTS OBTAINED, and USEFUL and ORNAMENTAL DESIGNS REGISTERED.

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FINISHED and WORKING DRAWINGS executed with accuracy and dispatch.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 34, Cockspur-street, watch and clock maker BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £3 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each. 22

DENT'S PATENT DIPLIEDOSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

ANDREW SMITH, PRINCES-STREET, LEICESTER-SQUARE, LONDON,

ENGINEER, MACHINIST, IRON AND BRASS FOUNDER, &c. 23

PATENTEE and MANUFACTURER of improved steam-engines, rapid steam generators, railway wheels, rails and chairs, propellers for canal and river navigation, rope-making, flax-dressing, and other machinery, raising and lowering machines, wharf, warehouse, and truck cranes, tramway, traversing, and stationary purchase crabs, tackle, &c. Also steam-engines and boilers, of various constructions; bone, sugar, and millwork, and machinery of every description manufactured and repaired.

Saw-Mills, Breweries, and Factories attended.

PLANING, BORING, TURNING, SCREW-CUTTING, &c., FOR THE TRADE.

Glossary of English Mining Terms.

At the request of several correspondents, we are induced again to give a Glossary of Mining Terms, which will be alphabetically arranged and divided into those applicable to Cornwall, Derbyshire, and Mexico or Brazil. These will be followed by philosophical terms, and those generally used in scientific works or reports.

CORNWALL.

Stamps—Machinery for crushing the ores with the presence of water.
Stamp head—The iron weight or head connected with the stamps.
Standard—The price of fine copper.
Stannary laws—Regulations for the management, &c., of tinners, administered by equity judges resident in Cornwall and Devon.
Stem—A day's work.
Stope—A horizontal bed; *to stope*, to excavate horizontally, layer after layer.
Spar—Quartz.
Spend—To break ground; to work away.
Squat of ore—See *bunch*.
Strake—A launder, or box of wood without ends, in which the process of washing or tying is performed.
Strapping plates—The iron plates by which the connection rods are fastened to each other.
Stream tin—Tin ore found in the form of pebbles, most frequently in vales.
Streamers—The persons who work in search of stream tin.
String—A small vein.
Stuff—Attle or rubbish.
Stull—Timber placed in the backs of levels, and covered with boards or small poles to support rubbish.
Sturt—When a tributer takes a pitch at a high tribute, and cuts a course of ore, he sometimes gets two, three, to five hundred pounds in two months; this great wages is called a sturt.
Sump—A pit: the bottom of the engine-shaft.
Sump-shaft—The engine-shaft.
Sumpmen—The pitman's assistants; men who attend to the machinery in the engine-shaft.
Tackle—Windlass, rope, and kibble.
Tamping—The material, usually soft stone, placed on the gunpowder, in order to confine its force, which would otherwise pass up the hole; also, the process of placing the material.
Tamping iron or bar—Tool used for beating down the earthy substance on the charge used in blasting.
Teem—To lade water in bowls.
Thrown—either up or down—Is when a slide intersects a lode, the dislocation being shown by a transverse section.—*Thrown up*, is when the undiscovered portion of the intersected lode is found to have been apparently lengthened—*Thrown down*, is the reverse.
Tichetings—The sale of ores.
Timber man—The man employed in placing supports of timber in the interior of the mine.
Tollar—A person who periodically examines the limits of ground producing tin ore belonging to himself or (the lord) his employer.
Ton—The ton varies in different districts: the common ton is 20 cwt. of 112 lbs. or 2,240 lbs. In Cornwall, the mining ton is 21 cwt. of 112 lbs. or 2,352 lbs. Tin is sold in Cornwall by the 1000 lbs. and not by the ton.
Tossing or Tozing—A process consisting in suspending the ores by violent agitation in water, their subsidence being accelerated by packing—the lighter and worthless matter remain uppermost.
Trade—Attle or rubbish.
Tram carriage—The carriage (usually made of iron) used on a tram road.
Tram road—Iron rail road way.
Trelooking—See Tossing.
Tribute—Proportion of the ore which the workman (tributer, has for his labour.
Tributers—Men whose pay is a certain proportion of the ore or value of the ores they raise.
Tribute pitches—The limited portions of a lode which is set to "a pair" of tributers, beyond which they are not for the time being permitted to work.
Tunnel head—The top of a furnace, at which the materials are put in.
Turned house—A term used when a level, in following branches of ore, is turned out of the original direction.
Trunk—A long narrow cistern or pit, in which the ore and slime which are mixed are separated by the subsidence of the former, and the washing off the impurities—the inclined box in which the ore and slimy impurities are separated in the process of trunking.
Trunking—Process of extracting ores from the slimes—subsequently the ores undergo the processes of racking and tossing.
Tummals—A great quantity; a heap.
Tut work—Work in which the labourer earns in proportion to the amount of his labour; being paid for driving at a certain price per fathom.
Tuyere—The aperture through which the air or blast is introduced into the
Tying—Washing. [furnace.
Underlayer—A perpendicular shaft, sunk to cut the lode at any required depth.
Underlayshaft—Shaft sunk on the course of the lode.
Van—To wash and cleanse a small portion of ore on a shovel.
Vugh or vogle.—A cavity.
Washing—The ore undergoes occasionally two or three washings; the first process being that of washing the slime and earthy particles from the rougher and large stones of ore.
Water in fork—When all the water is extracted.
Well—The lower part of a furnace into which the metal falls.
Whim—A machine worked by horse, steam, or water, for raising ores, &c.
Whim driver—Man who attends to the horse in the whim.
Whim rope or chain—The rope or chain by which the kibble is attached to the winding engine or whim.
Whim shaft—The shaft by which the stuff is drawn out of the mine by horse or steam whim.
Whip and derry—A kibble drawn to the surface by a horse, the rope attaching one to the other simply passing over a pulley.
Winch or winze—Contraction of windlass; the wheel and axle frequently used for drawing water, &c. in a kiddle by a rope.
Windbore—The lowest pump in which there are holes to admit water
Winding engine—One used to draw up ore, attle, &c.
Winze—A sinking on the lode communicating one level with another, for proving the lode, or for ventilating such drivings.
Work—Ores before they are cleansed or dressed.
Working barrel—The pump in which a piston works.
Working big—Sufficiently large for a man to work in.
Zawn—A cavern.
Zighyr—When a small slow stream of water issues through a cranny, it is said to zighyr or sigger.—(*Pryce.*)

[We have now concluded our list of "terms" used in Cornwall; in our next we shall commence those of Derbyshire, and which will be followed by the Spanish.]

THE TIN BOUNDS QUESTION—WHEAL RUBY.

COURT OF QUEEN'S BENCH—DEC. 8.

ROGERS *v.* BRENTON.—The declaration in this case contained two counts, of which the first complained of a disturbance made by the defendant of the plaintiff's right to take tin and tin ore in the mine of Wheal Ruby, within the manor of Helston, in the county of Cornwall, at a place called Galidna. The second count was in trover, to recover tin ore, which the defendant, who is captain of a set of adventurers who are working the mine in question under a license from the Duke of Cornwall, had extracted from the mine and placed upon the upper surface of the soil. The claim of the plaintiff was derived from a practice called "bounding," which is said to be of indefinite antiquity in Cornwall; and in virtue of which a tinner marked out four points upon the waste of a manor, and thereby became entitled to work for his own benefit, subject to a seignorial duty of 10 per cent. to the lord, all the mines of tin or tin ore to be found within the lines connecting the four points which had been previously marked out by himself; which right was said to be preserved either by actually continuing to work the mine, or by annually renewing the operation of marking the bounds. The legal validity of this custom of bounding was the question in controversy between the parties.—The action having come on for trial in this court, a verdict was found for the plaintiff, and, upon a subsequent occasion, a rule was obtained upon the part of the defendant for a new trial. Cause was shown against this rule upon a former occasion by the Solicitor-General and Mr. Smirke (the Solicitor-General of the Duchy of Cornwall) upon the part of the plaintiff, and the argument upon that side, which was then interrupted, was now resumed and concluded by Mr. M. Smith.

Sir T. WILDE (with whom were Mr. Crowder and Mr. Butt) appeared to support the rule. The learned gentleman's address occupied the Court until its rising, when Lord DENMAN intimated the propriety of turning the facts into a special case. His Lordship added, that it was not certain when the Court would proceed to hear the other counsel of the defendant.

Mining Correspondence.

ENGLISH MINES.

WHEAL BASSET MINING COMPANY.

Dec. 8.—At a two-monthly meeting of the adventurers, held this day, the following accounts were presented:—Labour cost for September and October, 2013*l.* 9s. 7d.; merchants' bills, four months, 1154*l.* 8s. 8d.—total, 3167*l.* 18s. 3d. Copper and tin ores sold September and October, 3727*l.* 15s. 2d.; deduct 1-20th, lord's dues. 186*l.* 7s. 9d.—3541*l.* 7s. 5d.: leaving a profit of 373*l.* 9s. 2d.; to which add balance in favour last account, 10*l.* 5s. 8d., leaves a balance at bankers of 383*l.* 14s. 10d.—We understand that the prospects of this mine are favourable, and that a larger profit will be made next account.

BARRISTOWN LEAD MINE.

Carrig Taghmon, Dec. 5.—Since my last report, we have had our monthly setting; our prices are as follows:—Flat-rod shaft, 10*l.* per fathom; the lode in this shaft looks well, worth from 35*l.* to 40*l.* per fathom. The engine-shaft is down thirteen fathoms, and the men are now employed in fixing the lift to bottom. The eastern end price, 4*l.* 4s. per fathom; the lode is eighteen inches wide, producing half a ton of lead per fathom. The stopes behind end are set on tribute, 5*l.* per ton; they look much the same as last reported. The end east, on the middle lode, 2*l.* per fathom; the lode is two feet wide, producing about half a ton of lead per fathom. The rise from cross-cut, on the middle lode, 2*l.* 10s. per fathom; the lode is poor, eighteen inches wide, producing stones of ore. The middle shaft, on the lode in eastern part of the mine, is making on tribute 5*l.* per ton; the lode is five feet wide, producing about two tons per fathom. In the shaft nearest the mine, we have cut the lode, but, from the great increase of water, we are not able to report its value—tribute pitches all at 5*l.* per ton. We are driving from flat-rod shaft on the lode, and the lode in the end looks the same as in the shaft.

DEVON AND COURTNEY CONSOLS MNING COMPANY.

Dec. 6.—I beg to inform you, since my last report, we have driven east in the deep adit level about six fathoms, the lode varying in size from one to four feet wide; the orey part of the lode is from two to ten inches big—the ore of a good quality. We have cut the lode in the cross-cut, driving north from the whim-shaft; the lode is about fourteen feet wide, composed of gossan, white iron, prian, flookan, mundic, and strings and spots of grey and yellow copper ore and malleable copper. We are driving east and west, carrying about four feet of the lode in each end; this is at the sixteen fathom level. We have parallel lodes south of the great gossan lode, from which we are driving north on a cross-course under the round wood to intersect some of the copper lodes, which will be from twenty-five to thirty fathoms deep; the ground in this cross-course is good for driving, in a soft strata of killas. S. SPRAGUE.

PLYMOUTH WHEAL YEOLAND MINES.

Dec. 3.—The adit level has been driven nineteen fathoms since it has been in solid ground; the ground is good for driving, and stands without timbering; it is a good light blue killas, and occasionally small branches of tin are met with; this I consider to be a very favourable indication. A shaft has been sunk about four fathoms on the north lode; the lode here is impregnated with copper throughout, with some good stones of ore occasionally.—R. EDWARDS.

HOLMBUSH MINING COMPANY.

Dec. 8.—In the 120 fathom level cross-cut the ground continues favourable. In the 110 fathom level, west of Hitchins's shaft, the lode is small and poor; in the stopes in the back of this level, west of Hitchins's winze, the lode is twenty inches wide, and worth 34*l.* per fathom; east of ditto the lode is one foot wide, and worth 20*l.* per fathom; in the stopes, west of sump winze, the lode is twenty inches wide, and worth 32*l.* per fathom. In the 100 fathom level, west of Hitchins's shaft, the lode is eighteen inches wide, and worth 11*l.* per fathom; in the south end the lead lode is two feet wide, and worth about 4*l.* per fathom; in the stopes in the back of the 100 fathom level the lode is sixteen inches wide, and worth 25*l.* per fathom. In the ninety fathom level, driving north, the lead lode is eight inches wide, at present poor. In the sixty-two fathom level west we have not got through the cross-course. In the rise in the back of the 80 fm. level, against Bray's shaft, the ground is hard.—W. LEAN.

TRELEIGH CONSOLS MINING COMPANY.

Dec. 6.—In the ninety, east of Christoe's, the lode is three and a half feet wide, worth 12*l.* per fathom; in the ninety, west of ditto, driving on the cross-course, we have not yet seen the lode; in the ninety, west of the sump winze, the lode is three and a half feet wide, worth 10*l.* per fathom. Garden's shaft, below the eighty, is sinking in the country. In Good Fortune shaft, below the seventy, the lode is about four feet wide, but little mineral. In the seventy, west of ditto, the lode is three feet wide, kindly, with stones of ore. In the rise above the sixty west the lode is three feet wide, producing some ore. In Symons's shaft, below the fifty, the lode is three and a half feet wide, worth 12*l.* per fathom; in the fifty cross-cut, north of ditto, the ground is a little softer for breaking; in the fifty, west of Symons's, the lode is two feet wide, and more kindly, with stones of ore. In the thirty-four, west of ditto, nothing driven. In the twenty, west of ditto, the lode is two and a half feet wide, with stones of ore, but not of much value. In the adit, west of ditto, nothing done since last report. I beg to inform you the men belonging to the thirty-four end are employed in driving a shallow level, to take off the water from the balance-bob pit at Maria. We have no air to drive the adit level.—W. SYMONS.

UNITED HILLS MINING COMPANY.

Dec. 9.—In Williams's shaft the lode is two feet wide, ore of fair quality, not looking quite so well as last reported. In the eighty fathom level east the lode is four feet wide, orey throughout, of fair quality; ditto west the lode is three feet wide, poor. In the seventy fathom level, east of eastern shaft, the lode is one foot wide, six inches ore of average quality; west of diagonal shaft the lode is three feet wide, one foot ore of low quality; east of James's shaft no lode broken in the past week; west of James's shaft the lode is three feet wide, producing some stones of ore. In the sixty fathom level, east of eastern shaft, the lode is two feet wide, orey throughout, of fair quality; west of Harper's winze the lode is three feet wide, one foot ore of low quality; in Harper's winze the lode is three feet wide, orey throughout, of fair quality; in the stopes, in the back of this level, the lode is two and a half feet wide, producing ore throughout; in the stopes, in the bottom of ditto, the lode is five feet wide, three feet ore of average quality; the diagonal shaft is suspended in consequence of the water. In the fifty fathom level the ground is still hard for driving. At Wheal Sparrow, we have again commenced driving Gibson's shaft, it is very wet and hard. In the fifty fathom level the lode is two and half feet wide, eighteen inches ore of low quality. In the forty fathom level, east of Gibson's shaft, the lode is two feet wide, orey throughout, of average quality; west, the lode is eighteen inches wide, poor; in the stopes the lode is eighteen inches wide, one foot ore of fair quality; in the winze the lode is two feet wide, producing some good stones of ore, not so good as last reported. In the thirty fathom level (Richards's shaft is down to the forty fathom level) we have commenced driving east, the lode is two feet wide, producing but a small quantity of ore; in the thirty fathom level, west of Richards's shaft, the lode is two feet wide, ore of average quality. T. TREVENEN. R. WILLIAMS.

SILVER VALLEY MINING COMPANY.

Dec. 8.—I beg to say that the engine works very well. The shaftmen have in the past week been busily engaged cutting ground in the eastern end of the shaft, for getting down the main rod, putting in bearers and cistern, and are now fixing a lift at the twenty-three fathom level, in order for getting other lifts below for forking the water to the bottom of the mine. We expect to get the thirty-three fathom level in fork this week. The north tin lode, in the adit end west, is three feet wide, composed of capel, spar, peach, and gossan, very poor, but kindly. S. RICHARDS.

WEST WHEAL JEWEL MINING ASSOCIATION.

Dec. 8.—The ground in the 116 cross-cut is much the same as when last reported—driven in the past month, 1 fm. 4 ft. 6 in. The 100 fathom level east, on Wheal Jewel lode, is eighteen inches wide, worth 8*l.* per fathom—driven, 4 feet; in the 100 fathom level west, on ditto, the lode is ten inches wide, containing good stones of ore—driven, 3 fms. 1 ft. 6 in. In the eighty-five fathom level west, on ditto, the lode is worth 10*l.* per fathom—driven, 3 fms. 2 ft. In the seventy fathom level west, on ditto, we have intersected a cross-course in the past week, disordered—the lode is now worth 6*l.* per fathom; in the seventy fathom level east, on ditto, the lode is two feet wide, unproductive—driven south, 3 fms.; east on lode, 5 ft. 6 in. The eighty-five fathom level, west of little cross-course, on Buckingham's lode, is eighteen inches wide, composed of prian, spar, and mundic—driven north, 2 fms.; west on lode, 2 fms. 6 in. The eighty-five fathom level west, on the south branch, is six inches wide, composed of spar and spots of ore—driven west, 2 fms.; driven north, 1 fm. 2 ft. The ground in the eighty-five cross-cut south is a little more favourable—driven, 2 fms. 4 ft. 6 in. The thirty fathom level east, on Morcom's lode, is two feet wide, unproductive—driven, 2 fms. 1 ft. 6 in. In the twelve fathom level west, on Tolcarne tin lode, the lode has not been taken down in the past week—driven, 2 fms. 5 ft. The deep adit west, on Wilkinson's lode, is three feet wide, composed of spar, mundic, &c.—driven, 1 fm. 5 ft. 6 in.

STEPHEN LEAN. R. JOHNS.

CALLINGTON MINING COMPANY.

Dec. 8.—We have commenced cross-cutting at the 112 fathom level from Johnson's engine-shaft, at the same time we are dividing the shaft, previous to taking out the penthouse, in order to get the machine kibble down to this level. In the 100 fathom level, driving north, the lode continues much the same as reported last week; the backs will set at 6s. in the 1*l.*, on the value of the lead; in the south end the lode has not been taken down. In the ninety fathom level north no lode has been taken down; an improvement appears to be taking place here, from the appearance of the wall of the same; there is also more water issuing from the lode. In the eighty fathom level no change has taken place. At the north mine, in the ninety fathom level south, the lode is split in branches, producing silver-lead ores; in the north end we have a promising lode, but not rich; the backs will set at 10s. in the 1*l.* In the eighty fathom level the lode continues productive, leaving ground that will set at 10s. in the 1*l.* In the seventy fathom level we are also opening tribute ground. J. T. PHILLIPS.

BEDFORD UNITED MINING COMPANY.

Dec. 9.—At Wheal Marquis, the new engine-shaft is 9 fms. 5 ft. below the seventy fathom level. The lode in the seventy fathom level east is two and a half feet wide, composed principally of gossan and spar; in this level west the lode west of the cross-course is eighteen inches wide, and unproductive. The lode in the fifty-eight fathom level east is two feet wide, and worth 7*l.* per fathom; and in the rise in this level the lode is two feet wide, and worth 5*l.* per fathom; the winze in this level is suspended on account of quick water. In the past week the lode has been met with in the cross-cut in the forty-seven fathom level west, and is about fifteen inches wide, composed of gossan, spar, and ore, worth 8*l.* per fathom—a very kindly lode. At Ding-Dong, the lode in the twenty-four fathom level east and west is four feet wide, producing good stones of copper and tin ore. At Wheal Tavistock, Phillips's engine-shaft is now down to the thirty-five fathom level, and we have commenced driving in an easterly and westerly direction at that level; the lode is about two feet wide, producing saving work, and very kindly. In the twenty-five fathom level west the lode is two feet wide, composed of gossan, spar, and ore. I forgot in my last to state, that we weighed at Morwelham, on Friday, the 28th ult., September ores, 101 tons 19 cwts. 2 qrs., and sampled October ores, computed 105 tons (21 cwts). J. PHILLIPS.

GUNNIS LAKE MINING COMPANY.

Dec. 9.—At Chilsworthy, the sumpmen are employed doing necessary work, getting ready pitwork, &c., previous to putting the engine to work. The lode in the adit level east is 2 ft. wide, composed of gossan and spar.—W. RICHARDS.

HAWKMOOR MINING COMPANY.

Dec. 9.—The lode in the south engine-shaft is eighteen inches wide, much as last reported. In the western engine-shaft the lode is small and poor. In the fifteen fathom level, east of Hitchins's engine-shaft, the lode is twelve inches wide, without alteration; and in this level west the lode continues fourteen inches wide, producing good stones of yellow copper ore.—P. RICHARDS.

EAST TAMAR CONSOLIDATED MINES.

Dec. 8.—At Whitson, in Hitchins's shaft the men have been engaged in putting down the plunger-lift at the twenty fathom level, which is completed, and the engine works well. At the south shaft we have cleared and secured, in the twenty fathom level, twenty fathoms north, no alteration; and south ten fathoms, just the same appearance. At Furzehill, the engine-shaft is cut down and secured eight feet; the lode is just the same appearance as last week's report, very promising. The pitch at this shaft is looking much better than I anticipated. I expect to raise from this part of the mine this month twelve tons of very rich silver-lead ore. At Charlotte's, just the same appearance as last report. In our dressing department we are getting on as fast as possible. We expect to have for November month upwards of fifteen tons of very rich silver-lead ore, and for December, by all appearance, we shall have upwards of twenty tons. I hope that every month will increase our sampling, as all the ground we discover will set on tribute. B. ROBINS.

TAMAR SILVER-LEAD MINING COMPANY.

Dec. 8.—In the 145 fathom level the lode is eighteen inches wide, producing saving work, of a coarse quality. In the 135 fathom level the lode is two feet wide, composed of capel and ore, rich work—a very promising end. In the 125 fathom level the lode is two and a half feet wide, six inches of which is good work. In the 115 fathom level the lode is split in two branches, yielding some promising work. In the 105 fathom level the lode is eighteen inches wide, producing some good stones of ore. The ninety-five fathom level is suspended for the present, in order to rise a winze for ventilation. In the eighty-five fathom level the lode is one foot wide, interspersed with ore, but not rich. In the fifty-five fathom level the lode is small and poor. The incline plane shaft is sunk about four fathoms below the 105 fathom level, and the ground still favourable for sinking. We sampled on the 4th inst., computed 114 tons of rich silver ore. At North Tamar, the lode in the sixty fathom level, north of the shaft, is about eighteen inches wide, composed of capel and mundic, with spots of ore. In the fifty fathom level the lode is one foot wide, saving work. In the forty fathom level the lode is eighteen inches wide, composed of can, killas, and ore, producing some good work. In cross-cutting at Wheal Hancock, the ground is disordered by slide courses—we have intersected three small branches, and have turned house, and are now driving north. JAMES SPRAGUE.

WHEAL MEXICO MINE (NEAR CALLINGTON).

Dec. 10.—The tributers have three parcels of silver ores for sale (muriate of silver, mixed with gossan), the best of which is worth 100*l.* per ton; they have now commenced a fresh pitch at 6s. 9d. in the 1*l.* In the twenty fathom level six men are driving to reach the cross-course, where, from the rich gossan and soft mundic seen on the back, there is scarcely a doubt of our meeting with a large deposit of silver ores. In the Duchy ground we are repairing the shaft, and clearing the levels, so as to open tribute ground. The new shaft on the copper lode is already sunk very nearly four fathoms; they are also rising towards the shaft, and will probably complete it in little more than a week. The lode is at present eighteen inches big, and carries a leader of jack on the footwall, from four to six inches wide; the other part of the lode is interspersed with large spots and veins of ore, and occasionally we meet with fine stones of solid lead, 3 lbs. or 4 lbs. in weight. W. KNOTT.

HANSON MINING COMPANY.

Dec. 8.—In reporting on these mines this week, I beg to say, Stainsby's engine-shaft is now under the twelve fathom level five fathoms, in which the lode is eighteen inches wide, with some good stones of ore—a kindly lode. In the twelve fathom level, east of Stainsby's engine-shaft, on Stainsby's lode, the lode is twelve inches wide, with some ore; in the twelve fathom level, west of sump whim shaft, on Stainsby's lode, the lode is two feet wide, unproductive. At Hanson engine-shaft, under the fifty-four fathom level, we are now under the level about four fathoms, in which the ground is favourable. In the fifty-four fathom level, west of Hanson engine-shaft, on Rib lode, the lode is two feet wide, chiefly mundic, but little ore. In the forty-four fathom level, east of Garden shaft, on Rib lode, the lode is twelve inches wide, composed of mundic and spar, unproductive. Z. WILLIAMS.

CONSOLIDATED TRETOIL MINING COMPANY.

Dec. 8.—The lode in the seventy fathom level, west of Henwood's shaft, is six inches wide, producing a small quantity of ore; the lode in the seventy fathom level, east of Henwood's shaft, is eighteen inches wide, producing good ore, and opening tribute ground; we have commenced a rise in the back of the seventy, east of Henwood's shaft, for ventilation, and also to open ground for tribute; the lode has not been taken down here since the commencement of rising. The lode in the sixty fathom level, west of Henwood's shaft, is eighteen inches wide, producing some good ore, and opening ground for tribute; this end is suspended for a short time, the men who worked in it have commenced to rise against Williams's shaft; the end cannot be driven, and the rise continued at the same time for want of air. The lode in Williams's shaft is one foot wide, good saving work. We have finished the top lift in new engine-shaft, and put in bearers and cistern, and have commenced to rear up bottom lift; the pitwork would have been completed, if we had not been hindered by the founder; the masons have not yet finished the boiler-house, the late rains having retarded their progress; it is likely, however, that the walls will be completed this week. The engineer is getting his work fastly to a close. HENRY WILLIAMS.

GREAT WHEAL MARTHA CONSOLIDATED MINES.

Dec. 6.—We have cut through the lode at the ninety fathom level (old mine), where it is divided; the south part is about nine feet wide, on which rests a lightish blue decomposed killas, under which traverses a vein about two feet wide, composed of capel, containing spots of yellow copper ore. We have not yet opened sufficient ground to be enabled to ascertain whether the whole (being about fourteen feet wide) can really be called a lode, or whether these are the same parts which united at the forty fathom level, and from which such large quantities of ore have been raised; particular attention shall be paid to this important point, and we will write to you more fully on the subject in our next report. The lode in the winze, sinking in the sixty fathom level, west of the shaft, is large and kindly, producing some copper ore. No alteration has taken place in the forty fathom level west. The lode in the twenty fathom level east, at Thomas's, which is cut through, is about four feet wide, consisting of capel, spotted with ore; the lode in the western end is seven feet wide, strongly mineralised from wall to wall, it has produced some very fine stones of ore during the past week, and, althongh it is not so orey at present, there are very favourable indications presenting themselves, and we shall be greatly disappointed if this lode does not eventually produce large quantities of copper ore. More mundic is at present found in the ten fathom level west, with a softish killas, both on the hanging and foot walls of the lode, traversed by small veins of mundic and yellow copper ore of good quality; the lode in the adit, driving west, is three and a half feet wide, composed mostly of gossan, with good stones of ore. We have contracted with smiths and carpenters to complete the iron and woodwork for the engine-house, capstan and shears, rods, whim, &c., &c., and the work is in active progress. The masonry too would have been carried on with greater expedition had not successive days of rain prevented the masons working. J. PRINCE. T. PENALUNA.

[FROM CORRESPONDENTS.]

TREGOODWELL.—This sett is situate on the borders of Roughton Moor, on the edge of an extensive granite range. About ten tons of good copper ore were sold from the adit level, below which the lode has never been seen; there are also lodes of lead ore, of very promising appearance, which have been driven on above, but not proved below the adit level.

GREEN VALLEY.—This mine having passed into other hands is now worked, under the name of Bescraleton Consols; it is situated north of East Wheal Tamar Mines, and contains the same productive lode. The present spirited proprietors, Messrs. Percival N. Johnson, C. V. Bridgeman, P. Stainsby, and Mathews, are likely to benefit considerably by their purchase—excellent courses of silver-lead having been discovered in the thirty and forty fathom levels, going east. Considerable pieces of ground, both east and south-east of the former sett, have been recently annexed to it, which render the Bescraleton Consols one of the most important and valuable setts in the locality.

ST. AUSTELL CONSOLS.—The improvement which has taken place in this sett is in the adit level, and consists of a junction of two lodes; upwards of twelve feet has been gone through, four feet of which is very excellent copper ore, worth about 60*l.* per fathom as far as has been seen. Shares have considerably advanced, freely exchanging hands in the county at 50*l.* to 55*l.*, although they have not realised more than 40*l.* in the London market.

WHEAL EMILY.—A meeting of the adventurers in this mine was held on the 28th ult., when it appeared that the labour cost for nine months to Nov. amounted to 247*l.* 9s. 8d., and materials 59*l.* 2s. 9d.—total, 306*l.* 12s.; and the call made at the last meeting amounting to only 240*l.*, there remained a balance against the mine of 66*l.* 12s. For paying this, and further prosecuting the mine, a call of 10s. per share was made, payable immediately.

NORTH FOWEY CONSOLS TIN AND COPPER MINE.—This mine is situated in the parish of Lanlivery, north and west of, and only a short distance from, one of the most productive and celebrated copper mines in the county—viz., "Fowey Consolidated Mines," and there can be no doubt but that her northern lodes must run through this sett. The mine was originally commenced by some working miners, who were afterwards joined by several spirited individuals. A shallow adit has been driven upwards of 160 fathoms, and a deep adit about sixty fathoms; in driving which they intersected many very promising lodes, (but from their inability to draw the water without erecting machinery, and the poor adventurers having more shares than on which they could possibly pay the cost) the mine was reluctantly abandoned, although some men offered to work on *tribute* for tin, if other parties would be at the expense of keeping the water. The sett is very extensive, and on the junction of the granite and killas; is held under a well-known and liberal lord for twenty-one years, at 1-16th dues; is near Parr Canal, which will be very advantageous for the shipment of ores and supply of materials. There is also a stream of water that can be made available for all mining purposes. Although many applications have been made to the proprietor for the sett, he has given the preference to some of the late adventurers, in consideration of their having expended nearly 2000*l.* The adventure is divided into 128 shares, and conducted on the cost-book system; and to work her more effectually, a steam-engine of 40-in. cylinder is about to be erected.

HERODS FOOT LEAD MINE.—The water has been forked to the thirty-one fm. level, where some very productive ore ground is found in the back, up to the twenty-four fathom level, and north of the shaft. The main object is south, and at a deeper level; the old workings having reached a fifty-one fathom level, which point will be seen in course of a few weeks. The delay has been occasioned by the founders' inability to supply the pumps, in accordance with their contract, in consequence of their excessive engagements. The general appearances present more than a common speculation.

EAST VITIFER TIN MINE.—This sett is held under lease for twenty-one years at 1-15th dues. The description of the ground is decomposed granite, intersected by elvan floors, similar to that in Great Birch Torr Mine, which has proved very productive. It is situated on the eastern side of Dartmoor, and bounded by the well-known productive mines called. Birch Torr or Old Vitifer, and East Birch Torr or Headlands, and some of the principal lodes from both run through it. There is a supply of water for working the machinery that may be required, and for other purposes of the mine. From the extent and appearance of the old workings on one of the lodes in East Vitifer—which is reported by several mining agents to be one of the most promising on Dartmoor—there is every reason to believe that great quantities of tin have been taken from it, and it is on this lode that the operations of the present company have so far been principally directed. Taking advantage of the very favourable position of the ground, three adits at different levels have been commenced, the deepest of which, when completed, will drain and admit of working the mine to a considerable depth. The excavations are now proceeding on the lodes in two of these levels, from one of them some good tin work has been raised, for the dressing of which, stamps, &c., are now being prepared. The mine has been recently inspected by J. H. Hitchens, Esq., Capts. A. Barratt, Robert Browing, Richard Moone, John Spargo, and Thomas Dunn, who have given most favourable reports.

WHEAL ELIZABETH MINE.—The western boundary of this sett commences about 500 fathoms east of Wheal Maria, and has been granted by the Earl of Devon to Mr. Hichens of the latter mine, Mr. Rundle, and some other gentlemen at Tavistock. Three lodes have been already cut, two of them of considerable promise, and one not so; the miners are now driving south to cut the great Maria lode, and, from the nature of the killas, and dip of the strata, there is every reason to hope it will prove equally good as at Maria Mine. One of the promising lodes already cut averages 2 ft., and the other from 9 to 10 ft., and one underlaying north, and the other south, they will form a junction in depth.

SOUTH ST. GEORGE MINE, Perranzabuloe, Cornwall.—This mine works much better than it ever has previously, and the produce of copper, lead, and blende, is gradually increasing, yet shares may be purchased at from 12*l.* to 14*l.*, whilst in July last they were in demand at 30*l.* per 1-260 share.

TREWALLACK.—The shaft is now down within three fathoms of the twenty-two fathom level, and a lode has been cut, producing fine stones of lead, about ten inches wide, in fine flookan; the whole is good work, and promises great improvement at the twenty-two fathom level.

WEST WHEAL MARY.—This mine is situate to the east of East Wh. Seton, and west of Wheal Mary setts, and possesses the main lodes of North Downs and Treleigh Consols, and as the mine can be worked at little expense, in consequence of Wheal Mary going to work, which will drain the water, and as shares can be obtained at 2*l.* each, it is deemed a fair and promising adventure.

WHEAL ANDREW AND NANGILES.—We are getting on well here, and are now driving six ends on lodes, which are looking well—excepting, perhaps, the eighty east, and we have reason to expect a favourable change here shortly. The five ends together will produce more than 100*l.* per fathom, and although we incur an additional expense of 200*l.* or 300*l.* in building stamps, &c., yet our proceeds will be ample to defray everything; and, when we commence working our backs on tribute, considering our tin money almost equals the copper, I think I may safely state we shall give good dividends to the shareholders, which is far more pleasing and gratifying than calls to the adventurers.

WHEAL PROVIDENCE.—In this sett tin and copper lodes have been discovered, and 600*l.* have been expended in the erection of an engine, worked by considerable water power.

TREVIDDOC.—A considerable quantity of tin is in sight at this mine—the machinery necessary for stamping, dressing, &c., is all erected—and immediate returns will now be made.

PENHARGARD, near Bodmin.—Several lead lodes have been discovered, and the indications said to be good.

NORTH STAR.—There is a most promising tin lode in this sett; the tin already raised is said to have been sufficient to pay expenses, and it can be proved to a considerable depth at moderate expense.

PENBUGLE.—There is here a very promising lode, with abundance of mundic.

WHEAL GROSE.—There is a copper lode here visible at surface, and an adit is being driven to cut it.

WHEAL PENCORSE.—A call was made at a meeting of the adventurers at Newlyn, on the 24th ult., of 1*l.* per share.

LOSTWITHIEL.—This sett is considered likely to prove valuable, and contains several promising lead and copper lodes, with silver.

WHEAL PROSPECT.—In this sett there are three distinct copper lodes, which have been cut at the sixteen fathom level, and produced good stones of copper ore; about 1300*l.* have been laid out in machinery, which will prove the mine to the forty fathom level.

UNION MINES, OWLACOMBE.—This property is about being worked by an influential and wealthy company—many miners have been engaged, and extensive arrangements are being entered into to prosecute the workings with vigour. We shall be glad to hear of their successful progress.

HEADLAND MINES, DARTMOOR.—We have heard of the discovery of a fine lode of tin here, which is said to hold out great promise for the shareholders.

CARDIGANSHIRE MINES.—We have been informed that the Cwmystwith Mining Company have just concluded an arrangement for the working of the whole of the Cardiganshire mines belonging to Colonel Powell, M.P., under a fair royalty. Preparations are making for exploring them with the same spirit and enterprise which characterises the conduct of this company in working their other undertakings.

THE DIAMOND MINE.—The Frankfort journal has an extract of a letter from Rio, giving some curious details of the diamond mines recently discovered in Brazil:—"Hats full of the stones have been picked up and brought away. Two-thirds of them are of a yellowish tinge, and do not possess the usual hardness of the diamond, but many of them are very fine. The house of Bomfim and Reebesler, the largest diamond merchants at Rio Janeiro, at first threw doubts on the reality of this discovery of the mine, but notwithstanding this every one who has diamonds on hand is endeavouring to sell them at the best price they can obtain, fearing a great reduction in the value. The country where the new mines are situate is thickly populated, but the people are mostly very poor."

THE WEARDALE MINERS.—A report is in circulation that T. W. Beaumont, Esq., is about to allow his men 2*l.* per month subsistance money, and an advance of 5*s.* per "bing" on the lead ore which they produce. Such an arrangement would tend to allay the anxiety, and satisfy the reasonable expectations of a number of the most orderly and intelligent labourers in the north.

An immense mass of solid iron has just been discovered along the base of the Green Mountains, between Monkton and Bennington, Vermont. It lies in regular solid beds, interstratified with rock, and generally reposing on limestone. The working of this ore is likely to render Vermont a large iron manufacturing state.—*Troy Bucket.*

WHEAL BREWER MINING COMPANY.

At a two-monthly meeting of the adventurers, held on the mine, the accounts were produced, when it appeared that the cost for September and October, amount to 255*l.* 0s. 1d.; merchants' bills, 75*l.* 4s. 5d.—total, 330*l.* 4s. 6d. Copper ores sold (less 1-15th dues, 67*l.* 3s.), 940*l.* 2s. 11d., from which deduct the above 330*l.* 4s. 6d., leaves a profit of 609*l.* 18s. 5d., to which add balance in hand at last account, 288*l.* 3s. 9d.—making a total of 898*l.* 2s.; and a dividend of 5*l.* per share having been made—leaves a balance to be carried to next account, of 298*l.* 2s.—From the report of the agent, it appeared that, although they could not boast of ends, the backs and pitches were looking well, and several dividends might be expected, but the future discoveries would depend upon the level being driven from Trethellan towards the Brewer Mine, which was coming in, but the lode poor.

GRAMBLER AND ST. AUBYN MINING COMPANY.

At the usual two-monthly meeting of the adventurers, held on the mine on the 9th inst., the accounts were examined and passed, from which it appeared that the labour cost for September and October amounted to 945*l.* 17s. 2d.; merchants' bills, 235*l.* 11s. 1d.—total, 1181*l.* 8s. 3d. The receipts were—Copper ores sold, 1154*l.* 15s. 10d.; tin ditto, 89*l.* 2s. 10d.—1243*l.* 18s. 8d.; less lord's dues, 78*l.* 19s. 5d.—total receipts, 1164*l.* 19s. 3d.—showing a loss of 16*l.* 9s., which, with the balance due the purser at last account, makes a total balance against the mine of 244*l.* 0s. 9d. It was stated that the prospects of the mines had considerably improved, and that from the favourable appearances exhibited, there was no doubt but that they would be enabled to liquidate this balance by next account meeting.

WEST WHEAL SETON MINING COMPANY.

A meeting of the adventurers was held on the mine on the 24th ult., when the accounts were examined and allowed. The cost for four months of July, August, September, and October, was 276*l.* 18s. 9d.; merchants' bills, 87*l.* 9s. 7d.—total, 364*l.* 8s. 4d. Balance in hand last account, 66*l.* 17s. 3d.; call made July 21, 500*l.*—total, 566*l.* 17s. 3d.: from which deduct the above 364*l.* 8s. 4d., leaves a balance in hand of 202*l.* 8s. 11d. The following is the report from the agent:—"Our adit end is thirty fathoms west of the shaft, and is driven by four men at 4*l.* 7s. per fathom; the lode is five feet wide, and composed of gossan, spar, and prian, with stones of ores scattered throughout. Our shaft is sinking under the eighteen fathom level on the course of the lode by six men at 8*l.* per fathom; this shaft is six fathoms below the eighteen fathom level, which is sunk on the south part of the lode, and is five feet wide, and no north wall to be seen. The lode is composed of mundic and spar, with stones of ore; we find the lode in sinking to be more regular, with a less underlie, and much more promising than nearer the adit, and in our eighteen fathom level we have four men driving west on the course of the lode, and the level is extended on the north part of the lode, which is composed of mundic, peach, prian, and stones of ore, at 3*l.* 10s. per fathom, and driving a cross-cut south to ascertain the width of the lode, and as well to prove the distance from the elvan course, with its underlie and directions, at 50s. per fathom; we have two men stoping the back of the eighteen fathom level on tribute, at 12s. in the 1*l.* From the position of our sett, by the lodes being parallel with those of a productive mine, and having many lodes passing through the same, some of which in an adjoining mine are very productive, I consider this to be an excellent speculation. JOHN LEAN."

A call of 2*l.* per share was made, payable on the 1st of January.

EAST WHEAL SETON MINING COMPANY.

A meeting of the adventurers was held at the Bassett Arms Inn, Pool, on the 2d inst., when the accounts were examined and allowed. The cost to the end of November was 286*l.* 8s. 2d.; calls paid-up, 187*l.* 1s. 4d.—leaving an amount due the purser of 99*l.* 6s. 10d.—The following report from the purser was read:—"The prospects of the mine are a great deal better; the disputed lode being decided in our favour: we hope with the present call, and the money from the sale of ore, to be able to get on for three or four months without another call. We are sinking a new shaft, and have not a doubt in the course of a fortnight of cutting ore in it."—A call of 30s. per share was made.

WHEAL FORTESCUE MINING COMPANY.

A meeting of the adventurers in this mine was held at the mining office, Tavistock, on Thursday, the 4th inst., JOHN RUNDLE, Esq., in the chair.—The following report from the agent, Capt. Williams, was read:—"Since the last meeting of adventurers, the adit level has been driven north, to end of October, about 22½ fathoms. The ground, as was expected, has proved hard, varying in price from 3*l.* 10s. to 6*l.* per fathom. I recommend this level to be still continued, and that a water-wheel of about 33-feet diameter, and 3½ to 4-feet breast, be immediately begun, and, by the time this is completed, I think it probable that our cross-cut may point out the best place for fixing the wheel and also for an engine-shaft."

From the statement of accounts, it appeared the costs for the four months, July, August, September, and October, had been 158*l.* 5s. 5d.—leaving a balance due by the adventurers of 7*l.* 19s. It was then resolved, that the report should be copied into the cost-book, and printed and circulated among the adventurers—that a water-wheel be immediately provided, as recommended in Capt. Williams's report—and an engine-shaft be immediately commenced, at such point as the agents may determine.—A call of 1*l.* per share was then made, payable on the 18th inst., and thanks having been voted to the chairman, the meeting broke up.

[During the meeting, some conversation took place relative to the sinking the engine-shaft, when Mr. J. H. Hitchins, Capt. Seccombe, and other mining agents present, were solicited to meet Capt. Williams and Capt. Keys, to concur on the eligibility of the spot—in accordance with which request, those gentlemen met on the following day, and, after dialling the lodes, selected the spot, and commenced the shaft, intended for the engine-shaft, and which, from its position, will command all the numerous lodes in the sett near Maria Mine.]

WHEAL ACLAND MINING COMPANY.

A general meeting of adventurers in this mine was held at Pearce's Hotel, Truro, on Tuesday, the 3d inst., when the following report from the agent was read:—"A plat cut at the fourteen fathom level (engine-shaft) two fathoms four feet. A cross-cut driven west at the fourteen fathom level from the engine-shaft eighteen fathoms—this end is now driving at 50s. per fathom. The fourteen fathom level driven north-east on a lode about eighteen fathoms; the lode is about twelve inches wide, composed of hard killas, spar, and mundic, and is now driving at 30s. per fathom. The fourteen fathom level driven south-west on the said lode about twenty-eight fathoms; in this end the lode is from eighteen inches to two feet wide, composed of soft killas, flookan, and mundic, and is now driving at 25s. per fathom. The operations of the mine are recommended to be wholly confined to driving the above three levels, which during the winter months is effected by means of a wheel worked by water from the surface. An adit level at the north part of the sett has been driven about 140 fathoms on the course of a lode, eighty fathoms of which was some degrees to the south of west, and for sixty fathoms altered its course to some degrees north of west; this lode is about three feet wide, composed of blue flookan and tender spar. Also two ends driven north at the adit level, at the north part of the sett, twelve fathoms."

From the statement of accounts, it appeared that the balance due to the purser to the end of December, 1844, was 201*l.* 8s. 9d.; costs for the twelve months, 570*l.* 17s. 9d.—total, 772*l.* 6s. 6d.: from which deduct call of 5*l.* per share, made 22d Jan. last, 640*l.*, leaves the amount due the purser 132*l.* 6s. 6d.—It was then resolved, that the operations of the mine be confined to driving the three levels at the engine-shaft with all possible speed, as recommended in the agent's report, and that a call of 8*l.* per share be made, payable immediately, for the liquidation of the balance due the purser, and for the further prosecution of the adventure.

WHEAL NEWTON MINING COMPANY.

At a two-monthly meeting of the adventurers, held at Launceston, on the 1st inst., the following report was presented by the captain:—"Since our Oct. meeting, several things of importance have made their appearance in this mine. We have now laid open at the surface and in the deep adit level nine different lodes and branches, as may be seen in the plan of the workings. Five of these have produced copper of good quality; four of them are parallel—five are crossing each other, and form a junction in such angles as are thought favourable in like cases. Near the middle of the hill is Smith's lode, worked to a depth of nine fathoms, and which has yielded several tons of copper; a fair specimen of copper is to be seen in this nine fathom level at this time. Smith's lode has taken an inclination north two feet in twenty-eight fathoms, or thereabouts, and being about thirty-five fathoms to the north of the middle and south lodes, will, it is anticipated, form a junction at about twenty-five or thirty fathoms under the adit level. The cross-course level has been driven fifty fathoms, and is now within eight fathoms of the perpendicular of our south lode, and at no great distance from a junction of three lodes, should these lodes continue as they appear at surface. We are now driving a level west of the deep cross-cut on the course of Smith's lode; the lode is small, but not unkindly; we have had a great many strings of copper in this driving.—W. SOBY."

The purser then presented his accounts for the past three months, of which the following is an abstract:—

Dr.	1845—July 28—Balance			£79	17	5½
	Aug., Sept., and Oct.—To costs			157	12	8
	Balance in hand			27	17	8½—£265 7 10
Cr.	1845—July 9—Call of 1*l.* per share—paid			£248	10	0
	Aug. 6—Sale of ore			16	17	10—£265 7 10

J. T. PEARCE.

The adventurers were pleased with the continuing good prospects of their promising speculation, and determined on prosecuting it with their wonted spirit

WEST WHEAL ROSE MINING COMPANY.

SIR,—In reply to your correspondent, "M. S.," inserted in your Number of last week, I herewith forward you particulars of that sett for his information; and, from my personal knowledge of the respectability of the adventurers who have taken the sett, and commenced operations, I feel assured they have entered upon the adventure with the most positive convictions of its genuineness, and are fully determined to try the mine effectually. Being an "accredited correspondent" of the Journal, I shall be most happy to meet "M. S.," and afford him all the information I possess, or to receive from him the improbabilities respecting the prospects of the enterprise, which I fear his letter implies. My card I inclose.—J. L.: *London, Dec.* 10

WEST WHEAL ROSE.—This mine is situate in the parishes of Phylack and Gwinear (and was formerly worked or known as Mellenoweth Mine), and consists of two estates, called Mellenoweth, of about sixty acres, in the former parish, belonging to Richard Edmonds, Esq., of Penzance, and Cold Harbour, of about thirty-five acres, in the latter parish, the properties of the said Richard Edmonds and Paul Burall, Esqs. There is a deep adit driven about 400 fathoms in the western boundary of Mellenoweth, on the course of the lode, which is extended into the hill from forty to fifty fathoms, and a shaft sunk in the side of the hill about ten fathoms on the same lode, on which this adit is driven, from whence several tons of copper and lead ore have been obtained, the lode carrying both copper and lead; this adit will command a back of about thirty-five fathoms, in driving forty or fifty fathoms under the hill. There is another lode about twelve fathoms south of this shaft, and ten others north, none of which have ever yet been proved, having only been discovered during a survey recently made. South of the Mellenoweth lode, on which the adit has been driven, there is a caunter lode which intersects it, but no trial has been made thereon; consequently, much is anticipated, as caunter lodes generally make ore, and, if not, it presents facilities for cutting or intersecting the east and west lodes. In another part of the sett there is an adit driven for about 300 fathoms, cutting several lodes, one of which only has been worked, from whence a quantity of tin ore was formerly raised. A very fine champion cross-course has also been discovered recently, and costeaning pits are in course of sinking in various parts of the sett to develope other lodes. Several of the lodes underlie towards each other, and, from the opinion of practical miners, will form a junction at a shallow depth. The lodes, where seen, present most promising appearances, being composed of mundic, gossan, and speckled with sulphuret of copper.

CARADON CONSOLS—WHEAL NORRIS.

SIR,—In consequence of the marked improvement which has lately taken place in Caradon Consols, the shareholders in the adjoining sett (Wheal Norris), through which the main lode passes, are very naturally anxious to know what their prospects are of obtaining the adjoining ground (Jaysland)—which, although not absolutely necessary, would, notwithstanding, enhance the value of the property very considerably in public estimation.

To the best of my knowledge, the main lode in this sett—which is, beyond a doubt, a continuation of the South Caradon, West Caradon, and Caradon Consols main lode (the ground having been several times carefully dialled)—is from 200 to 300 fathoms in length, and two lodes from the adjoining sett unite with it, somewhat in the direction of the engine shaft. The northern part of the sett, which embraces the Craddock Moor and Gonamena lodes, is already sufficiently extensive. A reply, from some one well informed on the subject, will greatly oblige—A SHAREHOLDER: *Dec.* 4, 1845.

EAST WHEAL SETON MINE.

SIR,—In looking over the *Mining Journal* of the 29th instant, I perceive a mistake with regard to this mine. I am a shareholder there, but not a puffer. You say they have sampled forty tons of ore, worth 12*l.* per ton; and that shares are bringing 50*l.* per share. The last share that was sold, brought 11*l.* 10s., which was sold last Tuesday; and they have sampled twenty-eight tons of copper, which is for sale on Thursday next; and by the assay, it will bring not more than 4*l.* per ton. So you see that the statement of your correspondent is erroneous.—A LOVER OF TRUTH: *St. Day, Dec.* 4.

NORTH WHEAL LEISURE—GREAT WHEAL RAMOUTH.

SIR,—I notice, in your Journal of the 29th ult. an inquiry respecting "North Wheal Leisure, and Great Wheal Ramouth Tin and Copper Mines." I beg to inform your correspondent, that the former is being worked by a company of Cornish adventurers, (I believe) of pretty high respectability; and that the concern is a profitable one. Of the latter, I know nothing; but, perhaps, some of the parties concerned will forward you the required information.

Perranzabuloe, Cornwall, December 4. G. F. M.

EXTENSION OF MINING—EXETER AND PLYMOUTH RAILWAY.

SIR,—I have often looked through your paper, hoping that some able person might have called attention to one or more of the numerous mines recently sprung into being, bordering on the line of the proposed Direct Exeter and Plymouth Railroad, and have felt somewhat surprised at its passing unnoticed, as many of the shareholders cannot be residents. It has been long known, that numerous rich veins of metal traverse the district; but, although many thousands of tons have been dug out and sold, mining, until lately, has been more generally looked upon as destructive to property, than otherwise,—and good Cornish miners, coming into the neighbourhood, were regarded as so many foreigners, attempting to obtain a settlement. Many there are still who express their surprise, that it is deemed necessary to get any men, but their own parishioners, to carry on the work of mining; and names of persons well known as land-drainers have been quoted, as very competent to undertake the management; while those labourers who were employed by them as ditchers, proper men for the underground work. Instances have occurred in this neighbourhood, where abundance of ore has been produced under such management,—and any one knowing the extent of the mine, and the sales of ore, would naturally expect they were paying good dividends; but men have got rich, and proprietors poor. Restrictions on the part of landlords in granting setts in this district—such as circumscribed limits, and heavy penalties for damage to the surface—have, in times past, been almost prohibitory; but these, too, have passed away, and leases are now granted on the usual mining terms.

Five mines have recently commenced work, in the locality referred to—three tin, two copper, and one lead and copper. The last is named the South Devon Consols, and situated near Ivy-bridge. The sett is extensive, and contains several lodes. Three copper, and two lead, have already been discovered. One of the copper is producing fine stones of ore and gossan, at the ten fathom level. The mine is divided in 360 shares, and worked on the cost-book system: shares are selling at 10*l.* per share. Altogether this is a mine of great promise. The copper mines referred to are near Buckfastleigh: one (Wheal Ann) was worked about fifteen years ago, by small tradesmen of the neighbourhood, under what is erroneously termed cheap management. Upwards of 30,000*l.* worth of ore was produced, at and above the thirty fathom adit level, which went chiefly to enrich the miners. This lode is six feet big, and the speculation is pronounced by experienced practical agents, of a first-rate character, and under good management, will, doubtless, pay large dividends, with very little outlay. Water power is at command, and two wheels are being erected, with other necessary machinery, for prosecuting the work with spirit. At the other copper mine—Wheal Emma—two lodes have been discovered. The north one is from four to six feet through—producing at the adit level fine gossan, large masses of mundic, and spots of yellow and grey ore, and is a strong champion lode. The south lode is about twenty inches big in the adit, composed of white spar, with mundic, and some good saving work. The country is soft killas, favourable for copper. Great results are expected from this speculation, from the underlay of the lodes, indicating a junction at a depth of forty fathoms. A powerful water wheel is at work, pumping water from the engine shaft, which is down fifteen fathoms under the adit; and every exertion is being made to get to the twenty—at which point it is proposed to drive and cut the lodes. The tin mines are near Ashburton—one of which has been worked to some extent; 40,000*l.* worth of ore having been sold from this mine since 1839. It has recently changed hands, and is considered a good speculation. The work is proceeding with vigour. Wheal Beam, a mine adjoining, is producing quantities of tin ores, which I hope has afforded the proprietors some dividends. The other tin mine referred to, is near Haytor, about five miles from Ashburton, where they have a lode of great promise, producing tin of a very excellent quality.

It is the opinion of many experienced miners, that the above named district will become one of very active and extensive mining operations, when it is more generally known; and as there are in it many fine lodes of copper and lead unwrought, I trust some of your readers will find both time and means to develope some of its rich resources.—A SUBSCRIBER: *Ashburton, Dec.* 4.

MINING SOUTH OF TAVISTOCK—PLYMOUTH.

SIR,—Seeing an article in your valuable paper of last week, headed Mining South of Tavistock, I take the liberty of sending you a copy of a letter, which appeared in the *Plymouth Times* of Nov. 1st last, on the resources of Plymouth and its neighbourhood. Should you think it worth inserting, I will occasionally send you others.—A SUBSCRIBER: *Plymouth, Dec.* 4.

SIR,—That Plymouth has made a fair start in the race of improvement, there can be no doubt; and that she will obtain, and maintain, the character of the emporium of the west, I for one firmly believe. Her position as a central seaport, the easy access at all times, and in all weathers, the facilities for internal transit which the approaching railroads will give, and the natural resources of the country around it, assure me that Plymouth will soon enjoy a higher name among strangers, than a fishing town, dependent on a naval arsenal. The plans for the improvement in Mill Bay and Sutton Pool, have, no doubt, been well matured, to meet the requirements of the expected extended trade of the port, and are well calculated to attract the attention of the mercantile capitalists. My present purpose, however, is to remark on the mineral, rather than the mercantile, resources of the neighbourhood.

It is within recollection, that the opinion of the best mining authorities was

that there was no copper east of the Truro bridge; and when the copper was discovered in the Great Crinnis Mine, near St. Austle, it was for a long time considered mundic. Since then, copper mining has been gradually creeping towards us—until, according to appearances, the east of Cornwall and west of Devon bid fair to be the grand copper districts of the two counties. I shall confine myself to a short description of proceedings around us. Old Harrowbarrow Mine is ready for a new steam engine, nearly finished at Mare's Foundry, with a fair prospect, from the quantity of lode worked, and carried away by former parties, of giving a good return. Drake Walls, to the east, is also getting in an engine: this is a tin mine, worked on a small scale for many years, and will now be worked vigorously. There are many other mines on the Cornish side of the river in progress, only waiting a stimulus from one or two good results. On the Devon side, Wheal Maria, with her 10,000*l.* per month returns, must be the first; the Bedford United Mines are making fair returns; Wheal Friendship still keeps up her returns, about 300 tons copper ore per month. Several new lodes are being opened on the same or parallel lodes. West Wheal Friendship has a large lode in the adit level, and promises well. On this side Tavistock, several mines are opening—Wheal Creber, William and Mary, George and Charlotte, Tavy Consols (including the Little Duke Hockleke), Devon and Courtney Consols, East Crowndale; and at Grenofen, and Plaister Down, in Whitchurch, copper lodes are now laying open of no ordinary description—being large gossan lodes at the latter place, ten to twelve feet wide: at the former, the lode is five feet wide, with a leader of eighteen inches, containing native copper, carbonates, &c., equal in appearance, for the depth, to anything that can be shown in the two counties. At Horrabridge is North Wheal Robert, where twenty or thirty tons of ore have been raised just under the surface; Wheal Collier, near Huckworthy-bridge; Wheal Massy, to the east of the village; and Wheal Roborough, to the south; Meavy Consols, at Meavy, and Plymouth Wheal Yeoland, in the enclosed lands south-west of the Roborough rock. At Wheal Anderton, the steam engine, made by Mr. Mare, is working well, and the mine spoken of favourably. There is another sett attached to this—New East Crowndale. At George and Charlotte, there is a good course of ore, in the deep adit level; large returns were formerly made in the shallow level. Devon and Courtney has made some noise for the last week—a good branch of ore having been cut in the deep adit. Wheal Franco steadily, but quietly, progresses as the lode is laid open; the returns, about 700*l.* per month, and increasing. This week, a good course of ore has been discovered in sinking a winze below the twenty fathom level, in the western part of the mine, where there has been but little ore previously found. This mine looks business-like: the new counting-house, dressing-floors, machinery, &c., show something doing, and preparations for doing more. I fear I am trespassing too much on your valuable columns, but the subject appears too interesting not to give it publicity. ——— AN INHABITANT.

CLOIGGAN TIN MINE.

SIR,—I shall be much obliged if you can obtain from some of your numerous correspondents information respecting Cloiggan Tin Mine, about which a notice appeared some months ago in your columns. Great expectations were raised at the time, and, if their means are exhausted, there can be no doubt that a fresh company could be formed to take so promising a sett, and carry on operations with the necessary vigour. In the present improved state of mining enterprise in Cornwall, it were to be desired that some competent correspondent would occasionally forward you particulars of the various projects now afloat in the Duchy.—*Exeter, Dec.* 10. ——— A CONSTANT READER.

[ADVERTISEMENT.]

LAMERHOOE WHEAL MARIA MINE.

SIR,—I noticed, in the *Mining Journal* of the 8th ult., and also of the 22d, reports of the meetings of proprietors of Lamerhooe Wheal Maria Mine, which reports, I presume, were all furnished to you by Mr. Frederick Samson Thomas; and on them I wish to say a few words, because some shareholders, who were not there, may, perhaps, be somewhat alarmed at Mr. F. S. Thomas's statement. I am a holder of shares in that mine, and was present at the meeting of the 8th November,—and noticed particularly the extraordinary manner of Mr. Thomas's proceedings. I am a stranger to him, and also the greater part of the shareholders—therefore, I have no personal feeling either for or against any one more than another; and I write this to caution those who were not at either meeting, against being at all alarmed by what has already appeared in your paper relative to this mine. 24

At the meeting on the 8th November, Mr. Thomas professed to appear there as agent to a Mrs. Williams, and also as proxy for his son; yet, all the time, calls both these interests his own; and while acting as proxy for his son, that son was present, and voted with his father in every case. Mr. Thomas stated he had very important matters to lay before the proprietors, which would occupy more time than that day could afford, and I was one to propose a particular day to meet and hear what he had to say. I was present during the whole time of the meeting on the 22d ult., and I do assert that Mr. Thomas was listened to with the greatest attention, from one o'clock till past four, to hear his rehearsal of the history of this company. Various charges were certainly brought against parties (whose names he has since published), which are of no manner of consequence to the proprietors. Full eight-tenths of what he did say was a waste of time; but that which is of any importance to the company, could have been expressed in twenty minutes, and might have been discussed and arranged very soon; but no one of those complained of had any time to rebut Mr. Thomas's statements, because he evidently talked against time to prevent a reply. With respect to the original lease, my opinion is—it is void, and no use whatever to any one. The clauses which it contains, to compel the works to be constantly carried on, or the landlord should be at full liberty to re-enter, and take possession of the estate, and relet or otherwise, as he pleased, are binding on both parties; and to show how this lease must be forfeited, instead of keeping the works in progress, the ground was not touched by the lessee for sixteen years previous to the present company taking it—therefore, it was not likely the landowner would allow Messrs. May and Cole to remain (dog in the manger like) doing nothing themselves, and preventing others, when he had a good offer made him for the sett by other parties. Whatever Mr. Thomas may say, my opinion is, the original lease to May and Cole, now nearly expired, together with the letter he professes to hold, to grant an extension of ten years, are perfectly worthless. The letter cannot alter the terms of the lease; and the fact of May and Cole never having worked the mine since the death of Mr. Lethbridge, who granted the lease, must certainly nullify both,—but we have only Mr. Thomas's statement relative to the existence of this letter. He ought to have produced that at the last meeting; for, in answer to myself, he said it was at his office: therefore, he could have produced it, if he had been determined fully to satisfy the shareholders. However, in respect to the above letter, Mr. Lethbridge, the present owner of the estate, positively asserts that his father never gave any writing, of any kind whatever, to May and Cole, for an extension of their lease for ten years longer, and I think the landlord is quite as worthy of belief as Mr. Thomas. The landlord knew of all the existing outstanding leases on Lamerhooe estate, because he had the counter part by him; and if he relet that estate, well knowing he had no power to do so, in what position does he stand at the present time? He took one thousand pounds from the lessees for the sett; and if he had no right to let the estate, then he has committed a fraud on us; and the clause in the new lease, on which Mr. Thomas lays so much stress, will not avail Mr. Landlord at all. If he took our money, well knowing he had no right to do so, he cannot, by any artful clause, save himself; but it must then be a deliberate act of fraud, and it will (should it turn out so) cost him his whole estate to get over it; but I have no fear on this head—no landlord would ever be so unwise. With regard to the purchase of May's interest by Thomas, he (Mr. Thomas) has interfered with that which he had no business with. May's lease had been submitted to the most eminent solicitors both in London and Devonshire by himself, and declared by all to be useless.

With regard to the charges brought against Mr. Edwards, Mr. G. W. Snell, and others, (the finance committee), they are not worthy of belief; and as to their slipping their heads out of the halter, and getting others in it—this, I know, is not true,—because some have increased their holding considerably; but as regards Mr. Thomas, and the position he occupied on the 27th September last, I am afraid he has slipped his own head into the halter so tight, that he will find great difficulty in slipping it out again.

Mr. Thomas states he was treated disrespectfully at the last meeting. I was present all the time, and I declare that's statement is not true. It was impossible for any man to be treated more fairly: he had it all his own way, till we came to the resolution,—and that was vague and unsatisfactory, because, in reply to myself, Mr. Thomas could not name the expenses of Mrs. Williams, nor could he show to the satisfaction of the company, that the 700 shares would not be claimed and enforced from the company. Mr. Thomas ought to have produced every document, and also the respective persons, and had them properly identified; and then, I have no doubt, the 150*l.* would readily have been voted, provided it was found correct. As regards myself, I have no fear of being at all injured by the claim for the original lease; and I am also well satisfied of the validity of the lease to the present parties—Messrs. Edwards, Snell, and Co.; but with respect to Mrs. Williams, not one of the parties ever saw that lady yet to know her—therefore, I consider, on the whole affair, with Mr. Thomas, his proposition cannot be adopted, without full investigation first. Mr. Thomas is not justified in the course he has pursued, and the charges brought against Mr. Edwards and others, of fraud and deception, I believe, are not true; but I remember, at the meeting of the 8th November, in reply to some objection being made to Mr. Thomas interfering in the business, he not being a registered proprietor, he claimed a right to be there as agent to Mrs. Williams, and also in his own right, his son having transferred his shares to him, and he held in his hands the counter-part of that transfer; but on being asked for the purser's acknowledgment of the transfer, he could not produce it, and complained of the purser's inattention, in not replying to him some day's previous. However, not being able to prove his right to vote, he then became proxy for his son; and that son also remained the whole time, as before stated: but when we met Mr. G. W. Snell, the purser, at the next meeting, and inquired why he had not replied to Mr. Thomas, relative to the above transfer, he declared he had never received it at all, nor any letter from Mr. Thomas relative to it, and had no knowledge whatever of it. Many of the company then present were informed of this, and we had no reason to disbelieve the purser,—because, if the calls were paid, he had no business to refuse the transfer; but Mr. Thomas did not allude to that at the last meeting.

I observe also, Mr. Editor, in your last week's journal, that Mr. Thomas says he will not attend another meeting of this company, because they did not treat him with common courtesy. Different persons may have very different notions as to what is common courtesy; but I know that Mr. Thomas proceeded without interruption for a long time, till he introduced subjects not belonging to the particular business for which the meeting was called; when, from some objection being made, he stopped and declared he could not properly inform the company of their position, unless he repeated all. After a pause of about one minute, at the request of a proprietor, he was desired by the chairman to proceed, and no objection was made whatever by any. He continued as he pleased, until he came to his resolution, which was not adopted. If he means this to be uncourteous, then I agree with him; but if he means the company treated him personally with contempt, or in any way disrespectfully, then I assert, that it is grossly untrue.

It seems to me, by Mr. Thomas's argument, that he wished the company to adopt his resolution, without any examination into the correctness of his statements; but I ask any reasonable man, was it prudent for the company to do so? My opinion is, the resolution came to by the company, to take counsel's opinion upon it, is the proper course to pursue, —and Mr. Thomas then promised to send the secretary a copy of the letter mentioned, granting an extension of ten years, the next day. Mr. Thomas says, in your last week's paper, his only object is to reconcile differences; but his is certainly the strangest way of making friends I ever saw: he sets about charging people with fraud and deceit, and abusing all who in any way differ with him; and then says he does it to reconcile differences. We may justly exclaim, save us from such friends. The charges made against Mr. Edwards and Mr. G. W. Snell are personal matters, between them and himself, and of no manner of consequence to the company. Mr. Thomas has brought this affair forward in the wrong way. There was plenty of time at the meeting on the 8th November, to have heard and arranged the matter, if he had only stated that he found there was some opposing claim to this mining sett,—and he had made a conditional agreement with the claimant, and produced the requisite papers to prove the claim to be good, a committee could have been appointed, to investigate the whole,—and, if found perfectly correct, I have no doubt the company would have consented to pay the 150*l.*: but, although he promised, three weeks ago, to give up copies of certain papers, I do not find that he has done so yet,—and he now tells the world he will not meet the proprietors again. I presume he considers the statements he made, at the last meeting, against certain persons, who acted with himself in taking this mining sett, will be fully explained; and I can only conclude, as he will not go there to hear it, he must be afraid to meet the respective parties openly. Mr. Thomas's letters have gone forth to the world in your journal, and some may think he has been badly used; but this I must leave, till I see the explanation which the parties charged will give at a future time. Nevertheless, I must say, for my own part, as an impartial observer of this business, (having no personal feeling for or against Mr. Thomas, or any other member of the company, in particular), the time Mr. Thomas occupied the last meeting, and the exposition then made of private matters, between himself, Messrs. Edwards and Snell, and publication of the whole to the world since that meeting, has been as much to gratify his own feeling of revenge, for some differences existing between them, but which are of no consequence to the company, or anybody else; and whatever difficulties this mining sett may now get into, may justly be charged to Mr. F. S. Thomas. I find the original lease to May and Cole was given up, and the only thing now to found their claim upon is the said letter from Mr. Lethbridge to Mr. May, and the present Mr. Lethbridge says his father never gave any written agreement, or letter, at all about it. Here I leave the public to judge for themselves how far Mr. Thomas is justified in his present proceedings.—HENRY SMITH: *Trinity-square, Borough.*

[ADVERTISEMENT.]

LAMERHOOE MINE.

SIR,—I have frequently been asked by my friends, why I delay replying to the "base calumnies" and "scurrilous attacks," so often of late inserted in your Journal, against my character, by a person of the name of Frederick Samson Thomas. My answer has been—"Give a dog rope, and he will hang himself."

This man has accused me of keeping moneys, arising from the sale of shares in this mine which belonged to him, and that he would bring his action for the recovery thereof. I have been waiting several months for this threatened action, and keeping my defence until then; but, as you are pleased to continue the insertion of his slanders, I find it necessary to put the public right in this matter, and beg most solemnly to declare, that every shilling of the money received by me, for the shares alluded to, has been paid and expended by me, as directed by Mr. F. S. Thomas, in an agreement, and by letters written and signed by him, as well as Mr. Edwards, and Mr. William Snell, who were the parties interested therein, and who examined my accounts, and signed them as being correct—proofs of which are in my possession, ready to be produced to any respectable shareholder for his satisfaction, but which I must retain to meet his threatened action. I have still further proofs, which has lately come to my knowledge, and that is the "solemn oath of Frederick Samson Thomas" himself.

All the transactions that ever took place between Mr. F. S. Thomas and myself, relative to this mine were from February to May last; and on searching the Insolvent Debtors' Court, I find that, in the month of August last, one Frederick Samson Thomas petitioned that court (which, by-the-bye, was not the first time), filed his schedule, and was heard and discharged from prison, on the 23d day of September, now last past; and, on perusing his schedule, I find he sets out the names of various persons to whom he stood indebted, and I looked for the names of the parties indebted to him—and, after the statement he had made, and the threats I had received, I fully expected my own name would have been inserted as a debtor to his estate, but found the following entries:—

"Debtors.....None.	"Books, deeds, papers,'..None.
"Interests in land, None.	"Personal property .....None.
"'Shares,' &c. &c. None.	"Places and pensions ....None.
"Unpaid Legacies, None.	"Rights and powers,'....None."

"I, Frederick Samson Thomas, do hereby swear the contents of this, my schedule, and all and every part thereof respectively, are true. So help me, God.

"Sworn in court, 23d day of September, 1845, "FREDERICK SAMSON THOMAS."

"By the court."

This schedule is not made up in a hurry. There was plenty of time for thought, and then this Frederick Samson Thomas goes coolly and deliberately into a court of justice, and most solemnly swears that the contents of his schedule are true—in fact, "that no man in the world owed him a shilling," and that he had no shares, nor any books, papers, or deeds, on which he had any claim, nor any right or power to make any claim. Can you, Mr. Editor, or can your readers, believe that this is the same Frederick Samson Thomas, who has, since April last, been stating verbally, and in your Journal, that there is an unsettled account between myself and him, and that I owe him a large sum of money? Has this man, knowingly and wilfully, committed perjury,—or has he, week after week, been publishing in your Journal base and wicked falsehoods? I must, Sir, let you and your readers judge as to the truth of his assertions, and the "depravity of that mind that could have conceived them." I have now done with this Frederick Samson Thomas, and nothing that may be hereafter said or written by him, will receive any notice from me, except in a court of law. The accounts of this mine are regularly sent by me monthly to the "finance committee" in London, who have the vouchers in their possession, and can satisfy any shareholder as to their correctness. The title to this mine has also been questioned by this Mr. F. S. Thomas, and I do not hesitate to say without the least foundation.

Callington, December 11. G. W. SNELL, PURSER.

MENDIP HILLS LEAD MINES, SOMERSET.

These mines, so closely resembling in their geological stratification the lead mines in the Peak of Derbyshire, are progressing in the most satisfactory manner. The stratum, as far as it has been developed, is composed of limestone; which, in various parts of England and Wales, has proved productive of great courses of lead, especially in Yorkshire, Cumberland, Shropshire, and Derbyshire. Several centuries have elapsed since any workings have been made in the Mendip Hills,—and from the immense quantity of slags and halvans in the valley, it is quite manifest that quantities of lead must have been returned. A shaft of twenty fathoms is sunk from the surface, and a level driven about thirty fathoms, the end of which presents very promising indications for lead. A shaft of thirty fathoms has also been sunk, the lode in which contains some good stones of ore; but as yet they have not proceeded below the workings of the ancient miners. In all these workings, the limestone rock presents a very crystalline character in various places, and in others cavities filled with muddy deposits, intermixed with stones of lead. There is another shaft further to the north-west, which has been sunk a little distance from the great lodes, and which will intersect them at a considerable depth. The shaft nearest the great valley, before alluded to, has been sunk by the present company, from whence some rich lead ore has been raised at a shallow depth of four or five fathoms; the lode here presents all those favourable indications found in limestone rock. The advantages which these mines possess are of vast consideration and importance, as respects the item of expenditure; the whole range of hills, as far as has been ascertained, being free from water—consequently, no machinery will be required for pumping, which has hitherto been felt as a great drawback to mining.

Somerset is likely to become a county of deep interest, as regards its mineralogical wealth—in various parts of which regular and promising lodes of copper and lead have been discovered, as well as valuable deposits of iron, barytes, and coal; and, although but little progress has been made in exploring these resources, there remains but little doubt, that had the thousandth part of the almost incredible sums expended in the ill-remunerative foreign mines, or a small fraction of the immense capital which has been so recklessly squandered or absorbed in the railway monomania, only applied in developing the untried mineral districts of the British Isles, mines of wealth would have been opened, affording ample employment to our labouring classes, individual interest benefitted, and national honour promoted.

MINE ACCIDENTS.

Balleswidden Mine.—C. Ellis was killed by a fall of timber.

Wheal Gover, St. Mewan.—On Thursday week, three men, named W. Rickard, W. Thomas, and R. Thomas, were at their work underground when a fall of ground took place, burying them beneath it. Rickard was got out in three quarters of an hour alive, but two hours and a half elapsed before the other two could be extricated, and they were both dead.

Milford.—A quarryman, named Ford, was killed by a fall of coal.

Froggart, Derbyshire.—J. Rollason was killed in the quarry of Messrs. Heygate and Bentley, of Calver Cotton Factory.

Bridgetown.—B. Holman was killed by a fall of rock in the Red Hill Quarry.

Wednesbury, South Staffordshire.—J. Bird was killed by a fall of coal.—T. Bird was also killed while working in his brother's colliery at Lea Brook.

Deep Sink, near Calow.—J. Taylor was severely injured by a fall of earth.

Plymouth Works.—P. Phillips was crushed to death by a fall of coal.

Cwmbargoed Colliery.—W. Morgan, aged eight years, was killed here.

Cowpen Colliery, Newcastle.—W. Laws (deputy-overman) was killed here by a large stone falling upon him while he was taking down some timber in the pit.

Cramlington Low Colliery.—W. Hasking (a Welsh boy, aged fifteen) was killed by a stone falling from the roof of the mine.—Another Welsh boy, named Ellis, had his arm broken, and was otherwise injured, at the same time.

INCREASED HEAT GAINED BY BURNING YOUR SMOKE.—In proof of the increase of heat gained by burning the smoke, we may cite the experiments of Mr. Henry Holdsworth, of Manchester, who has shown, that in the front flue of a furnace, of common construction, the thermometer seldom rose above 1100 deg. Fahr, and often fell below 940 deg., the mean being 975 deg., while in the same furnace, when consuming its own smoke, the mean temperature was 1160 deg. Fahr., ranging between 1400 and 1000 deg. The quantity of water evaporated by a pound of coal was *one-half greater* than when the smoke was not consumed.—*Liverpool Health of Towns' Advocate.*

AMMONIA IN RAIN.—Any one may satisfy himself of the presence of ammonia in rain by simply adding a little sulphuric or muriatic acid to a quantity of rain-water, and by evaporating this nearly to dryness in a clean porcelain basin. The ammonia remains in the residue, in combination with the acid employed, and may be detected either by the addition of a little chloride of platinum, or more simply by a little powdered lime, which separates the ammonia, and thus renders sensible its peculiar pungent smell. The sensation perceived on moistening the hand with rain-water, so different from that produced by pure distilled water, and to which the term "softness" is vulgarly applied, is also due to the carbonate of ammonia contained in the former.—*Liebig.*

An Irish mile is 2240 yards; a Scotch mile is 1948 yards; an English or statute mile, 1760 yards; German, 1800; Turkish, 1826. An acre is 4860 square yards, or 69 yards 1 foot 8½ inches each way. A square mile, 1760 yards each way, contains 460 acres.

PROGRESS OF FRENCH MINING INDUSTRY.

[FROM OUR PARIS CORRESPONDENT.]

Algiers being counted upon by the French Government for supplying the metals which France needs, a glance at what has been done thus far in that country may be useful. In the province of Algiers iron ore is very abundant; among other places in the environs of Blidah—in the Atlas, between Blidah and Medeah; near Ain-Talaaid, Mouzaïa; in the mountain which runs along the right bank of the Chiffa; at Zafour, near Miliana; the Mount Zakka; in the valley of the Chelif; in the environs of Tenes; at the foot of the Ouarensensis. In some of these places traces remain of iron-works executed by the Romans, and the Arabs appear also to have tried to turn the ore to account. From trials made by the French, it is established that the yield from the ore has not been less than 50 and not more than 60 per cent. The engineers who have examined the country on behalf of the Government, express their belief that the neighbourhoods of Bougie and Jurjura are more rich in iron ore than any of the sites yet discovered. In the province of Oran iron ore has been discovered in a ravine near the town on the route to Mers-el-Kebir. On the banks of the sea a bed of great wealth has been found, and the environs of Arzeu are expected to be very productive. In the province of Constantine iron ore has been found at the mouth of the Salsaf, to the south of the Mount Guerbes, in the Mounts Bou-Ahmrah and Bilelita, part of the chain of the Edough. The ores found in this province are represented to be quite as good as the best of Sweden; and, if so, they will be useful in the steel manufactures, the supply of iron to which—as shown in a recent letter—falls immensely short of the demand; the Government engineers profess to be convinced that Algiers will yield as much copper as France may require. France itself already yields a certain quantity of copper—somewhere about 1000 quintaux metriques annually—but the far greater portion of her supply has to be brought from Chili. Manganese has been found on the Mount Boudjaréab, near Algiers. The province of Algiers is believed to be very rich in lead, but at present nothing has been discovered to make the belief a positive certainty. To the east of Tenes traces of lead have been discovered; a stream flowing from the Mount of the Ouarensensis bears the name of the "Stream of Lead," from the quantities of that ore which exist on its banks. The Arabs have partially worked the ore, but so imperfectly, that the Government engineers succeeded in extracting from what they had abandoned not less than 45 per cent. of metal. The mine of Bou-Saleb, to the east of the Forest of Sétif, in the province of Constantine, is, however, the most important site of lead yet discovered, and it is there that the Arabs supply themselves with what they want for war and other purposes. Marble, lime, rag and freestone, are not, it seems, deficient in this "New France," as the French sometimes call their costly African colony, but, after all, the mineral wealth of Algiers, be it as great as it is said to be—be it even more important than that of Siberia—cannot, in my humble opinion, as I have before said, be turned to such account as the French wish; and that, because there is no fuel in the country—wood scarcely existing, and coal not having yet been discovered, unless *traces* of it—slight and unimportant, to the south-east of the Cape Desmendou, in the province of Constantine, can be called a discovery. Nevertheless, expense will not be spared to gain as much as possible from the mineral wealth that has been discovered, and to push the discoveries still further; though in a field of enterprise entirely unknown, private individuals have shown, with respect to the mineral products of Algiers, an energy rarely witnessed in the mercantile undertakings of their countrymen—companies having been formed, with considerable capitals, for working such concessions as the Government has thought fit to make, and new concessions are being solicited almost every month by other companies. It need not, perhaps, be necessary to hint to English readers, that it would be well to wait to see the results that will be gained, before embarking any considerable amount of money in any of these undertakings.

The mines of the Asturias, belonging to the late Marquis de Las Marismas (M. Aguado), are being constantly advertised for sale in immense placards, stuck on all the dead walls in this town; considerable competition is expected. The Government of Madrid, it appears, is at last beginning seriously to turn its attention to the mineral riches of Spain—a special school having been established, at its expense, in the province of the Asturias, for giving theoretical and practical instruction to such young men as may be disposed to devote themselves to the mining career.

Friday was the latest day for companies proposing to offer for the Paris to Lyons, and Creil to St. Quentin, Railways, to give notice of their intention to the Government. Not less than twenty companies had been established for the former railway; and of them eleven amalgamated themselves into one—three into another—and the rest, being insignificant and trumpery concerns, gave up the ghost. The eleven amalgamated companies were Messageries, Rowlage, for 43,333 shares; the Receivers-General, 43,333; the Union, 42,364; Lafitte, 42,364; Calon, 42,364; Ganneron, 42,364; Lapiusonniere, 38,335; Griolet, 27,500; Ardoin, 24,209; Decan, included in the Receivers-General; Rothschild, 10,000; and Messrs. Hottinguer, 43,334.—The total number is 400,000, each of which is 500 francs. The Postmaster's Company, and the company known as the Française, and as that of the Engineers, form the other amalgamation. It appears that it has really the intention of opposing the other great company; and (supposing it be accepted by the Minister of Public Works, as is almost certain) may be successful in its opposition—if so, the gigantic amalgamation of Rothschild, Lafitte, and others, will cut a very silly figure. It was expected that all the Creil to St. Quentin Companies would be united; but, at the last moment, it appeared they could not agree in arranging their opposing pretensions; five companies accordingly gave notice to the Department of Public Works. Notwithstanding this formidable array of competitors, it is believed that the Great Northern Railway Company will, by some means or other, succeed in inducing its opponents to withdraw, or which amounts to the same thing, suffer themselves to be defeated. The possession of the lease is of the very utmost importance to that company.—*Paris, Dec.* 10.

FORTH IRON-WORKS.—When we first visited the extensive iron-works now erecting at Oakley, little was to be seen or heard but the bustle and confusion which characterise great undertakings. The delightful solitude which reigned in the ancient domain had indeed been intruded upon, but as yet there was neither architectural structure or display of mechanical ingenuity to compensate for the change. Here and there were crowds of quarrymen; yonder, clusters of miners; in another direction groups of masons, barrowmen, wrights, clay-diggers, brickmakers, borers, and smiths. All were at work in great numbers. But the wonder was, what was the result of such masses? for their work was really hid. A few days ago, however, we again visited these works, and their magnificence now corresponds to the vast sums already expended in the purchase of property, &c., and the numbers who are constantly employed at them. On visiting the Oakley works, there is so much to attract attention that we could not attempt to give any thing like a graphic description. Some idea, however, may be formed of them by only noticing a few of the principal objects. And the first object to which our attention will be directed is to the engine-house. It is truly a piece of magnificent architecture, built of a singularly beautiful stone from the new Carnock quarry. When rough it resembles granite, when polished it has the appearance of gray marble. The building is 40 feet below and 50 feet above the surface of the ground; the foundation being a little lower than the neighbouring burn, some hundreds of yards distant, from which there is no tunnel to the engine-house. The edifice is of fine proportions and beautiful workmanship. The stones in front are finely hewn; they are all very large, and each cut the same size, so that the joinings at the ends of the stones of each second row form a perpendicular line from the foundation to the top of the building. There will be three or four windows in each front about thirty feet in height, each window being arched and ornamented with a choale moukding; and the whole building surmounted with a very rich coping. The lever wall, which runs across the building from the foundation to the top, is 90 feet, and about six feet in thickness. It is built of beautiful polished stones of enormous size, each block being three tons in weight. So extensive is the building, that in it there are deposited 60,000 cubit feet of stones below the surface of the ground. The next most conspicuous objects are the furnaces two of which are far advanced, the chimney-stalks being about completed: and they surpass in magnitude anything of the sort, we believe, in Fife, each stalk being about 180 feet in height—20 feet higher than the Old Abbey Church steeple. The furnaces are built of beautiful fire-brick, each brick being as large as stones commonly used in building ashler walls. Great quantities of fire-brick were at first imported from various quarters, but now they are manufactured on the premises; and the brickworks are on a scale corresponding with the extensiveness of the undertaking. An elevated tower is to be built of the same beautiful stone and workmanship as the engine-house, 80 feet above the ground, which will have a very imposing effect. The buildings for the accommodation of the families of those connected with the works are not the least interesting of the many objects which command the attention of the visitors. There are already about 200 houses built in the locality, all in connection with the works. Each house consists of two apartments, and has three beds. They are all occupied, and we are informed that there are on an average six inmates in every house. So we have in the lately secluded domain of Oakley a population of 1,560, and there are upwards of 100 workmen lodged in the neighbouring villages who cannot yet be accommodated in the newly-built houses. When the works are carried on to their full extent a much greater number will still be employed. The houses are all good substantial stone buildings of one story, covered with blue slate, and built upon a uniform plan. The distance between the rows of the houses is more than double the breadth of the streets of the new town of Edinburgh. So the buildings will not only have a pleasing appearance, but they will be free from the confusion and crowdedness which too often characterise the villages near public works.—*Fifeshire Journal*

THE MINERAL RESOURCES OF FRANCE IN 1844.

As mining operations are so rapidly developing themselves in France, we purpose giving weekly, in the *Mining Journal*, an extract from the official returns of the statistical works of the Administration of Mines, in 1844, which we have been favoured with from the Minister of Public Works in Paris; and that will be, no doubt, highly interesting to our readers.

The following are the forty-nine different departments of France,—all of which have more or less mineral resources; and we shall give a general *resumé*, without entering into the details of each:—Ain, Aisne, Allier, Lower Alpes, Upper Alpes, Ardeche, Aude, Aveyron, Mouths of Rhone, Calvados, Cantal, Lower Charente, Correze, Cote-d'Or, Creuse, Dordogne, Doubs, Drôme, Finistere, Gard, Herault, Isere, Landes, Upper Loire, Lower Loire, Loire, Lot, Maine-et-Loire, Manche, Mayenne, Moselle, Nievre, Nord, Oise, Pas-de-Calais, Puy-de-Dome, East Pyrenees, Lower Rhine, Upper Rhine, Rhone, Upper Saone, Saone-et-Loire, Sarthe, the Two Sevres, Tarn, Var, Vaucluse, Vendee, and Vosges. The number of mines worked, 261; not worked, 143; number of pits, 742; do. galleries worked in open air, 962; maximum of the depth of the works, 503 metres, or 1509 feet; steam machines or engines, 396; grinding machines, 118; horse power, 10,189; number of workmen employed in the interior of the mines, 21,979; out of the mines, 7549—total, 29,528; number of the days of working of all the miners during the year, 7,800,781; salary of the miners during the year, 651,717*l.* sterling. The produce of the working of the mineral fuel is distinguished in six categories as follows:—First, quantity of anthracite coal extracted, 5,744,158 metrical quintals, or 287,208 tons—value, 251,410*l.* Second, hard coal (short flame) 1,651,512 metrical quintals, or 825,756 tons—value, 69,902*l.* Third, gaseous coal (or forging) 3,962,397 quintals, or 198,120 tons—value, 131,170*l.* sterling. Fourth, gaseous coal (long flame) 19,418,167 quintals, or 970,908 tons—value, 629,315*l.* Fifth, small coal (long flame) 4,812,314 quintals or cwts.—value, 168,806. Sixth, lignite, stipite, &c., 1,336,848 cwts.—value, 52,230*l.*; total of coal extracted, 36,925,396 cwts.—value, 1,347,397*l.* The extraction of turf or peat during the same year was 4,609,082 metrical cwts.—value, 185,919*l.*, employing 46,249 persons at the expense of 88,410*l.*; total number of peat bogs, 2972, of which 389 belong to the *communes* or parishes, and 2109 to private parties; the remainder are not being worked. Until 1840, they had conserved the old division of mineral combustibles (or coals) coal, lignite, and anthracite. This division had the inconvenience of confounding, under the general denomination of *coal*, fuel quite different by their properties and their use. For the last three years the mineral combustible, or fuel, have been distinguished in six categories as stated above, as this new division is more conformatory to the present state of science, and the use to which these fuels are employed. The following is the succinct description of the properties which characterise the six categories:—anthracite, comprises all the mineral combustibles, or fuel, whatever may be the seams, which do not yield coke—that is to say, the fixed elements that do not associatiate themselves by a rapid confined calcination, or by the carbonisation operated on a large scale, which yields, after abstraction made from the cinders, at least 85 per cent. of fixed residue by the calcination in closed vases.—Hard coal (short flame) yields, after abstraction made from the cinders, 75 per cent. of coke by calcination in closed vase; it becomes more soft in the furnace, and issues forth a short flame. The other descriptions of coal yield about 60 per cent. of coke calcined in close vases.—Lignite, stipite, &c., comprises all mineral fuel, whatever may be the seams, that do not yield coke, which, by calcination in closed vases, leave at least 50 per cent. of residue, and give an acid liquid matter. The following is the consumption of mineral fuel in France. To ascertain the interior consumption of the country in native coal fuel, and the quantity imported from foreign parts, it is only necessary to deduct the amount of exportations. The total production of France was in 1844, 36,925,396 metrical cwts.; the importations from Belgium were 9,918,606 cwts.; from Great Britain, 4,556,622; from Prussia, Bavaria, and the Rhenish provinces, 2,130,144; from other countries, 21,502 cwts., of the value of nearly 2,000,000*l.* *Extraction or preparation of iron ore.*—The total quantity of rough ore was 24,177,003 cwts., the value of which yielded 619,617*l.* sterling. *Cast metal.*—4,226,219 cwts. of rough metal, obtained by mineral or vegetable fuel; the value of which yielded nearly 2,000,000*l.* sterling. *Bar-iron by different methods.*—3,084,450 cwts. The working of mines and mineral stratum was as follows:—stratum worked, 1748; not worked, 307—total, 2055. Mines worked, 143; not worked, 111—total, 254. Workmen employed on the stratum, 9434; ditto in the mines, 2206—total, 11,640. From the stratum there were obtained 21,148,024 cwts. of rough ore; do. mines, 3,026,979; total, 24,177,003—value, 289,006*l.* sterling. The rough ore yielded 18,585,831 cwts.; and the washed ore produced 8,522,299 cwts.—value, 370,444*l.* The number of high furnaces blasted with charcoal and by cold air in full work was 296; inactive, 100—total, 396. High furnaces by heated air in full work, 80; inactive, 8—total, 88; grand total, 484, employing 3713 persons. The making of the metal requires 7,286,058 cwts. of ore; of old metal, 4491 cwts.; charcoal, 3,556,176 cwts.; coals, 40,040 cwts.—the product of which was refined metal 2,119,359 cwts.; do. moulded, 505,069 cwts.; total, 2,624,428 cwts.—value, 1,763,773*l.* Number of furnaces alternately worked with charcoal only and coke mixed were as follows:—high furnaces by cold air in full operation, 17; do. by heated air, 9—total, 26, and 256 workmen. The quantity of ore employed in making the metal was, ore 716,339 cwts.; filings, 6444 cwts.; charcoal, 272,401 cwts.; coke, 78,106 cwts.; coal, 14,902; wood, 17,214 cords; produce, refined metal, 255,803 cwts.; moulded do., 50,404; total, 306,207—value, 172,362*l.* Number of furnaces worked by coke alone or mixed with coal:—high furnaces, by cold air, 12; do. by heated air, 33—total, 45; number of workmen, 868. The consumption of ore was, 2,900,708 cwts.; old metal, 66,084 cwts.; coke, 1,800,010 cwts.; produce, refined metal, 790,640 cwts.; do. moulded, 212,179 cwts.; total, 1,002,819 cwts.—value, 441,253*l.* The following is the grand total of each:—high furnaces by cold air, 442; do. by heated air, 165—total, 607, and 5175 workmen. Quantity of ore employed in making the metal, 11,700,870 cwts.; old metal, 72,002 cwts.; charcoal, 4,066,659 cwts.; coke, 1,818,116 cwts.; coal, 548,351; wood, 627,796 cords—produce, refined metal, 3,367,127 cwts.; moulded do. 859,092 cwts.; total, 4,226,219—total value, 2,564,570*l.*

Refining by the Catalan and Corsican System.—The ore is at once converted into iron in the furnaces supplied with wood. The number of which is 135; number of workmen, 894; the consumption is 325,339 cwts. of ore, and 361,150 charcoal; produce of large iron, 108,451 cwts.

Refining by the Comtois System.—The metal is refined in a low furnace by charcoal, it is then hammered out and reheated in the refining furnaces, of which there are 984; number of workmen, 3867. The consumption in the making of the large or bar-iron is 1,173,053 cwts. of cast metal and old iron; charcoal, 1,315,810 cwts.; coal, 8405 cwts.; and, wood, 2813 cords; the produce of large iron was 864,279 cwts.—value, 1,136,458*l.*

Refining by the Walloon System.—The metal is refined in a low furnace by charcoal, and is hammered out, but re-heated in a second furnace; the number of refining furnaces was 51; heating furnaces, 30; number of workmen, 494. Materials employed: cast metal, 83,718 cwts.; charcoal, 96,367 cwts.; coal, 1100 cwts. Produce of large iron, 55,157 cwts.

Refining by the Nivernais System.—The metal is refined by charcoal in two operations, each in a low furnace; the mixing, or refining, properly speaking, is done in the refining furnace, the number of which is 56, and 107 workmen; the quantity of cast metal employed, 11,221 cwts.; charcoal, 22,070 cwts.—yielding 8061 cwts., value 15,536*l.*

Refining by the improved Comtois System.—The refining takes place in a low furnace by charcoal; it is hammered out or flattened in re-heating by coal, peat, or gas, in a special low furnace, or an oven. Number of furnaces, 94; workmen, 746. Materials employed: metal and old iron, 142,655 cwts.; charcoal, 113,344 cwts.; coal, 44,541 cwts.; turf or peat, 70 cords—yielding 111,357 cwts. of large iron, value 193,380*l.*

Refining by the Champenois System.—This method is by puddling with coal in a reverberatory oven; it is hammered out after re-heating by coal in a low furnace; the number of puddling ovens was 106; re-heating furnaces, 113; workmen, 919. Quantity of materials employed: metal and old iron, 374,185 cwts.; charcoal, 6496 cwts.; coal, 345,878 cwts. Produce of large iron, 287,584 cwts.

Refining by the English Method.—They refine the metal by coal, and often in two operations; the preparatory refining takes place in a low furnace, and the puddling or definitive refining in a reverberatory oven; it is flattened out after re-heating in the oven; the number of refining ovens was 19; puddling, 338: re-heating ovens, 160; number of workmen, 4467. The quantity of material employed was—cast metal and old iron, 2,101,144 cwts.; coke, 258,852 cwts.; wood, 729 cords; coal, 2,892,353 cwts.; charcoal, 56 cwts.; turf, 3817 cords: producing 1,303,427 cwts. of large iron, and 284,930 cwts. of rails—total, 1,588,357 cwts., of the value of 2,350,000*l.* sterling.

Grand total, 11,841 workmen. Materials employed: mineral ore, 325,339 cwts.; cast metal and old iron, 3,960,895 cwts.; charcoal, 1,917,718 cwts.; coke, 258,852 cwts.; coal, 3,315,068 cwts.; wood, 3542 cords; turf, 3887 ditto—total value of materials, 775,195*l.* Produce of large iron, 3,084,450 cwts.; value, 4,549,178*l.* sterling.

[*To be continued in next week's Mining Journal.*]

ROYAL SCHOOLS OF MINES OF ST. ETIENNE AND ALAIS.

We gave, in a former Number, a short account of the encouragement given by the French Government in the establishing of mining schools in the different mineral departments where those, who are intended to be brought up to mining pursuits, are instructed *gratis* in every branch applicable to mining operations—such as a thorough knowledge of the different ores, the mineral and geological properties of the various districts of the kingdom, and the most effectual methods of working her coal, iron, lead, and other mines.—The following are a few particulars respecting the Royal School of Mines of St. Etienne and Alais:—the School of Mines of St. Etienne is established for the purpose of forming directors or mining captains for the working of the mineral resources, and the metallic or mineral foundries and forges. There are there different categories of students—viz., those commissioned after an examination; the students of the class of workmen, who are to display a proof of the instruction they have received in the primary schools, so as to receive appointments by the direction or Mining Department of Paris, and the pupils who are studying for their own private future avocations.—These courses of lectures, and the practical, as well as theoretical, methods of working of ores, are delivered by experienced professors or mining engineers. The director of this excellent establishment is M. Rousel Gall, chief engineer of mines.

The School of Master Miners of Alais, which has been but recently erected, will be opened before January next. The object of this institution is, to initiate the students with a thorough knowledge of all the elementary principles, and more particularly the most approved practical duties of the art of mining, for the formation of intelligent workmen, and persons destined to conduct the subterraneous works or excavations as foremen or master miners. The instruction will be given by an engineer-director of mines, by a mining master, and a superintendent of mines. Thus the Royal Schools of Paris, St. Etienne, and Alais, will complete the hierarchy of instruction relative to the art of exploring and working of mines. One of the great advantages of these useful mining colleges is, that the students not only receive a thorough theoretical knowledge of every principle or system connected with mining in all its branches, as confined to the methods adopted in France, Belgium, Germany, Sweden, Russia, Wales, Cornwall, Staffordshire, Durham, Sunderland, and other parts of Europe, but the Brazils, and the whole of North and South America. Prizes are annually distributed to those who have made the most proficient progress in the various branches of mining industry. There are foundries, forges, smelting furnaces, ovens, &c., erected on the grounds belonging to the establishments on a small scale, and models of every description of machinery for the working of mines, both steam and hydraulic, as well as some of the finest specimens of the ores and minerals from every part of the globe. One grand object the Government has in view is, the forming of experienced miners, so as to compete with the progress making on the continent and this country in the improvement of mines; but particularly the making of iron and steel, as well as machinery of every description, now that railways and steam navigation are making so rapid a progress in northern Europe. To render the instruction at these mining schools more efficient, the students, accompanied by their instructors, descend, at certain terms, into the different mines in the vicinity where the system of mining working is practically demonstrated to them. Similar institutions to the above have been for many years established in Germany, which have produced some of the first miners and writers on mineralogy of the last half century. It is a remarkable fact, that it is the Government in all foreign countries that does everything to improve the arts and sciences, commerce, mining operations, manufactures, agriculture, railways, steam navigation, &c., whilst England—the most commercial and enterprising nation in the world—has entirely to depend upon her national industry and private speculation, for all her improvements, unassisted by the Government. This is an example to the Legislature of this country to adopt.

CARRYING THE ELECTRIC TELEGRAPH ACROSS RIVERS.—We noticed, a short time since, that the wires of the telegraph at New York had been carried across the East River, through a lead pipe, in one continuous piece of half a mile in length, and we had hoped this would have been found an efficient means for establishing the communication between the two shores; we are, however, sorry to announce that the connection is again broken. The ship *Charles*, from Liverpool, it appears, had anchored in the river, and, on weighing her anchor, the flukes passed under the pipe, and, after very considerable exertions on the part of the crew, who were astonished at the unusual weight, the pipe made its appearance above the water, and, before ropes could be attached to lower it, the pipe, wires, and all broke in two pieces, and again sunk. Ought not notices to have been placed on each side the river, and conspicuous buoys floated over the spot, to warn mariners from anchoring just in this situation? The re-laying the pipe must be attended with considerable expense.

THE VICTORIA IRON-WORKS.—Having received a letter from a correspondent, complaining that there was a slight inaccuracy in our report last week, of the judgment given by his Honour the Vice-Chancellor, on Friday, the 5th inst., in the case of Frazer v. Sir Benjamin Hall, which, it may be remembered, was argued during the last term, for the production of certain papers and documents which passed between the legal advisers of Sir Benjamin Hall and the Monmouthshire Banking Company, relative to the granting of a new lease of the Victoria Iron-Works, and which were contended to have passed at such a period of the transaction, as to render them privileged communications,—we have referred to the report we gave of the case, and which, we believe, to be perfectly correct—but, to satisfy our correspondent and others interested, we now also append, verbatim, that which appeared in the *Times* of the 6th:—"His Honour said the plaintiffs, as creditors of the original lessees, having recovered judgment in 1843, and issued *fi fa*, which was in the hands of the sheriff, raised a curious objection, how far the *fi fa* taken out by the judgment creditor would interfere with the right which the original creditor had, to buy the tramroads and the plant under the proviso of the lease. A great deal of correspondence passed between the agents of Sir B. Hall and the plaintiffs, as to what was to be done under the circumstances; and his Honour thought that there might have been a treaty carried on, about which there was no dispute—the treaty might fail, and, therefore, independently of the question of a binding agreement, there remained the question of the rights of those who represented the lessors, as against those who issued the *fi fa*; and, therefore, he was of opinion that the papers and documents which passed after October, in 1843, were privileged."

THE CALEDONIAN RAILWAY.—This line is now fairly in course of formation; and, among its numerous and gigantic schemes, are two branches to the town of Dumfries, with the details of which we have but just been furnished. The proposed station at Dumfries is contiguous to that of the Glasgow, Dumfries, and Carlisle. The length of this branch is rather more than 14¼ miles. The southern branch leaves the Caledonian main line, near Springfield, in the parish of Gretna, passes the Steel, crosses the Kirtle, at Mill Flax, then goes by Rigmoor and Birkhill, Old Lough and Moor House, straight on to Annan, by Solway Cottage, and close past Annan *quoad suem* church, where a branch runs off to Port Annan. The main branch then crosses the Annan, from the western bank of which, alternative lines are proposed, one by Kelhead, and another by Cummertress. If the former is adopted, it will go straight from Annan to the lime quarries, and the Cummertress line to the town of Dumfries. This undertaking will be one of great importance to the south-west of Scotland.

CHICHESTER AND BOGNOR RAILWAY COMPANY.—This company has been formed for the purpose of constructing a short line of railway from Chichester to Bognor, and thus bring that favourite and justly admired watering-place into railway communication with the metropolis, with Brighton and Dover by means of the connecting lines eastward, and with Portsmouth, Southampton, the west and north-west of England, by the established lines in those localities. Bognor has long been noted for the salubrity of its climate, the mildness of its atmosphere, its wide spread and carpet-like sands, its facilities for bathing establishments, and the rural beauties of the surrounding country; these have drawn crowds of visitors, and invited the settlement of many noble and wealthly families in its immediate neighbourhood, and with an extensive population, and that of Chichester, a large local traffic between these termini is sure to be the result; but, when we take into consideration the continually increasing number of visitors from distant counties—the rapid improvement of Bognor, which is yearly progressing—the races at Goodwood, the seat of the Duke of Richmond, now about the first in the kingdom and in the immediate neighbourhood, and the inexpensive character of the proposed line, render it highly probable that this little projected line will prove as remunerative as any in the kingdom. The projectors have in this case, wisely we think, taken all the necessary proceedings for coming before Parliament in the ensuing session before they issued a prospectus; the plans, sections, and books of reference, have all been deposited, the required notices given in the *Gazette* and local newspapers, and, having thus complied with the Standing Orders, they are thus wholly prepared for the preliminary sanction of Parliament. Short in length, free from all complication, and without opposition, it can be completed at a very early period. The capital is 120,000*l.*, in 6000 shares, of 20*l.* each

PROTECTOR LIFE ASSOCIATION.

The second quinquennial meeting of the proprietors of the Protector Life Association was held on Thursday, the 11th instant, at 1 o'clock, at the company's offices, Old Jewry.—MATTHEW BOULTON RENNIE, Esq., the chairman of the association, presided.—The attendance of proprietors was more than usually numerous.—The CHAIRMAN, in opening the proceedings, said, that the present meeting, although an annual one, was more than usually interesting, inasmuch as it occurred at the conclusion of one of those long periods at which insurance offices were accustomed more particularly to investigate their affairs; and he was extremely glad to find that sufficient interest had been excited to bring together such a large body of proprietors (hear, hear). As the business of the society was one of averages, of course no single year could afford a criterion of its success. Sometimes companies might lose considerably, and at other times they might be considerable gainers, and be stable or unstable almost without knowing it. But at periods like the present they were enabled to arrive at a perfect knowledge of their weakness or stability, and he was glad to say, that no doubt whatever could be entertained of the stability of the Protector Life Association (hear, hear). The directors were satisfied that it had made the most satisfactory progress, and he was quite sure, on hearing the report, that the proprietors would entertain the same opinion. The report would show a greatly augmented division upon that of the former period. At the first quinquennial meeting, not more than 6000*l.* was divided amongst the proprietors, extending over a sum of 350,000*l.*, but on the present occasion the dividend was 25,000*l.*, extending over double the former amount (hear, hear). In the first division it gave an addition from nil (which was, in fact, no addition at all) to 4 per cent. upon the amount of insurance. The addition at present was from 8 to 14, which was, of course, an immense progress. The first period showed an addition of 3 per cent. to the capital of the proprietors; but the present presented an increase of 12½ per cent. The particular advantage of the division of profits between the proprietors and the assured in this society were so fairly and justly balanced, that whilst, on the one hand, a fair mercantile profit was secured to the proprietors, there was no pressure on the assured, who obtained almost as much as they could in a mutual insurance society; whilst, at the same time, they had the protection of a large capital. If the capital was employed at the common rate of interest, it would give nearly 5 per cent. dividend; and the 12½ per cent. to be divided to day was not more than a fair mercantile profit for the period of five years. This was a very important and a very satisfactory feature in the establishment, which ought to secure for it the respect and approbation of the public. The receipts had systematically increased from year to year, but the expenses of the management had not by any means increased in a proportionate ratio. The management in the first year of the society's existence cost about 2020*l.* At the present moment, it did not exceed 2600*l.*—There were some other matters connected with this quinquennial division which were of considerable importance. The bonus to those who had been the longest assured was not so large as in some other offices, where a person must be assured for a certain period to entitle him to participate in the bonus; but, in the Protector Society, the bonus was distributed to the last comer. This might be said to operate against the the older assurances in favour of the younger ones; but the former were compensated by the increasing popularity of the office, and its increasing business. These were the principal points to which he had thought it necessary to call the attention of the meeting. The report would explain the exact position of the funds of the society, and the amount of business; and he would, therefore, at once call upon the secretary to read it.

The SECRETARY then read the following

REPORT.

The directors meet the proprietors on the present occasion with much pleasure. At the quinquennial meetings the statements which they have to submit are necessarily of a more than ordinarily interesting character to all concerned. Before they proceed, however, to what is more immediately the business of the day, the directors beg briefly to mention, that the transactions of the past year have been very satisfactory. The receipts amount to 40,899*l.* 14*s.* 5*d.*, and the payments (including 11,569*l.* 12*s.* 6*d.* for claims) to 20,906*l.* 9*s.*, leaving a clear surplus for the year of 19,991*l.* 5*s.* 5*d.*; the number of new policies issued is 57 per cent. greater than that of the preceding year,—the sum assured by them being 118,054*l.*, and the premiums 6467*l.* 12*s.* 9*d.* During the ten years that the society has been in existence, there have been issued 1500 policies, assuring the sum of 1,214,295*l.* Of these, 468, for 407,850*l.*, have lapsed from various causes, leaving actually in force, on the 31st October last, 1032 policies for 806,145*l.*, the premiums receivable in respect of which amount as nearly as possible to 30,000*l.* per annum. To determine the value of these assurances, or the sum which should be reserved to meet all the future claims arising under them, a minute and careful estimate has been made of the value of each assurance separately—a most laborious process, but one rendered necessary partly by the various and complicated nature of the risks undertaken by this society, and partly by the principles upon which its divisions of profit are made. A similar investigation has been entered into with regard to the society's reversionary property, both absolute and contingent; and after setting aside the sum of 74,640*l.* 19*s.* 5*d.* to meet these several liabilities, and to provide for future expenses and contingencies, the directors find that they have a clear available surplus of 25,000*l.* This sum, therefore, with the sanction of the proprietors now assembled, they propose to divide, in the manner directed by the society's deed of settlement, allotting three-fourths of it to the holders of policies effected on the participating scale, and the remaining fourth to the proprietors. Should this recommendation be approved, the proprietors will be entitled to receive in January next, in addition to the half-year's interest then payable, a bonus of 12½ per cent. on the original cost of the shares—or, in other words, 12*l.* 10*s.* for every 100 shares. The amount apportioned to the policy holders will enable the directors to make additions to the sums assured, averaging with the former bonus 32 per cent. on the premiums paid. Each policy holder will be informed, with as little delay as possible, of the amount added to his particular assurance, and of the reduction in premium equivalent thereto, so that he may be enabled to decide which of the two options he will adopt. In the meantime, it may be satisfactory to give the following table of the additions to policies effected at different ages for 1000*l.*, on which ten premiums have been paid.

Age.	*Sum.*	*Premiums.*	*Addition to sum assured.*	*Per cent. on prem.*
20	£1000	£20 10 0	£ 84 0 0	£41 0 0
30	1000	25 5 10	93 14 0	37 1 0
40	1000	32 10 0	105 6 0	32 4 0
50	1000	44 0 0	121 18 0	27 7 0
60	1000	63 11 8	144 14 0	22 3 0

If the addition made in 1840 be excluded, and the present one be compared with the amount of premiums paid in the interval, it will be found to average 45·9 per cent. upon them. The directors are satisfied that these results will bear comparison with those afforded by any office of similar standing, particularly if the relative rates of premium be taken into consideration, and also the circumstances alluded to at the former quinquennial meeting—viz., that every policy in force on the participating scale shares in the division, whereas the usual practice is to exclude such as have not paid three, four, or five years' premiums. In the Protector, the surplus is fairly divided amongst all who contribute to it. It would be easy to augment the additions by limiting them to the older policies, and excluding those of more recent date,—but such is not the system or practice observed in this association. The directors trust that this statement will be satisfactory both to the proprietors and the assured. Their anticipations with reference to the result of the present periodical improvement having been fully realised, they consider that they may look forward with confidence to an equally favourable progress in future.

The CHAIRMAN, in moving that the report be received and confirmed, said he should be glad to answer any questions which might be asked, or to give any information which might be required by the proprietors.

Mr. PINCKARD enquired, at what rate do you estimate the funded property?—The CHAIRMAN: At the cost price.—Mr. PINCKARD: And also the mortgage and other assets.—Mr. JELLOES: At the original investment.

A conversation arose as to printing the report, and sending a copy to each proprietor, and a resolution to that effect was put; but Mr. PINCKARD thinking it would be better to leave the printing of the report to the directors, moved an amendment, which was, however, negatived, and the original motion was carried by a majority of 22 to 10.

Mr. BOUSFIELD said, although he had given a silent vote on the question, he must confess that the report was so excellent that he would not consent to the omission of a single word. Indeed, he thought the suppression of anything would lessen the confidence of the public in the undertaking. A better report could not have been framed, and there was nothing in it to be concealed.

ROBERT A. GRAY, Esq., as a director, felt confident that the report would raise the association still higher in the public estimation. He could not help congratulating the proprietors on the continued prosperity of the society. He was fully satisfied that no office in London of equal standing could show a more satisfactory result, and he trusted that the proprietors would endeavour to render it still more prosperous by introducing fresh policies to the office. The number of proprietors at present connected with the establishment was 440, and if each of them would obtain one policy, the prosperity of the association would be advanced in a still more remarkable degree.

A PROPRIETOR asked, as the expenses had increased from 2000*l.* to 2600*l.*, had the directors' salaries been increased?—and the CHAIRMAN replying that they had not, Mr. SIM moved that the allowance to the directors be increased from 600*l.*, which was only 50*l.* each, to 1200*l.*—and, after some conversation, it was unanimously fixed at 1000*l.* per annum.

Mr. PINCKARD made some remarks on the system of fines, which he considered highly injurious to the interests of the society, and had brought the shares to a discount; and he would move an instruction to the directors that they be abolished; but the CHAIRMAN explained that they were part of the Deed of Settlement, and could only be altered at a special meeting; and it was eventually decided that a requisition should be prepared for a special meeting on the subject.—Mr. HEDGES said, that no society could flourish without the assistance of an able secretary, and as the services of their secretary had been particularly valuable, he had great pleasure in proposing that the sum of 100*l.* be added to his salary.—The CHAIRMAN said, the secretary had discharged his duties most ably and efficiently, and if it was the wish of the society that he should receive an additional salary, they could have no objection, but he thought the matter had better be left in their hands.—Mr. HEDGES said, he would withdraw his motion, and merely recommend the directors to take the matter into consideration.—Mr. Cripps, Mr. Price, and the Hon. Mr. Talbot, were then elected directors for the ensuing year, in the room of Messrs. Boddington, Rennie, and Robinson, who retired by rotation; and Mr. Deedes was re-elected auditor.—Mr. BOUSFIELD proposed a vote of thanks to the chairman and directors, which was seconded by Mr. HEDGES, and carried unanimously.—The CHAIRMAN having briefly returned thanks, the proceedings terminated

RAILWAY SHARE LIST.

RAILWAYS.	Paid	Closing pr. last week.	Closing pr. last night.
Aberdeen	£5	4½	5
Armagh, Coleraine, and Portrush—25/ shares	1	1	1
Birmingham and Gloucester—100/ shares	100	134	131
Ditto New issue, 7½ dis.—25/ shares		20½	21
Birmingham and Oxford Junction—20/ shares	2	3	3½
Bristol and Exeter—100/ shares	70	79½	78
Ditto New—33⅓/ shares	2	4½	6
Bristol and Gloucester—50/ per share	30	53	53
Caledonian—50/ per share	5	7½	12
Ditto Extension—50/ shares		2½	2½
Cambridge and Lincoln—25/ shares		1½	2
Ditto New—25/ shares		1½	2½
Chelmsford and Bury		—	—
Chester and Holyhead—50/ shares	15	13½	13
Chichester and Brighton	20	14	14
Clydesdale Junction	5	16	12
Cork and Killarney—50/ shares		3	3
Cork and Waterford—25/. shares		1½	1½
Coventry, Nuneaton, Birmingham, and Leicester—25/ sh.		1½	1½
Cornwall—50/ shares	3	3½	1½
Derby, Uttoxeter, and Stafford		—	1
Direct Northern—50/ shares		2	1
Direct Manchester (Remington's)—20/ shares		2	1
Ditto Rastrick's			3
Dublin and Belfast Junction—50/ shares		6	3
Dublin, Belfast, and Coleraine—50/ shares		2½	2½
Dublin and Galway—50/ shares	4	4	3½
Dundalk and Enniskillen—50/ shares		3½	3½
Eastern Counties—25/ shares	14/ 16s	19½	19½
East Dereham and Norwich	1	1½	1½
East Lincolnshire		2	2
Edinburgh and Glasgow—50/ shares	50	65	67½
Edinburgh and Northern—25/ shares		5	4½
Edinburgh and Perth		3½	3½
Exeter, Yeovil, and Dorchester—50/ shares		2½	2
Gloucester, Aberystwith, and Central Wales—25/. shares		1	1½
Goole and Doncaster—20/ shares	42 s	2	2½
Grand Junction—100/ shares	100	236	235
Ditto ½ shares—50/ shares	17½	31	33
Ditto ½ shares—25/. shares	—	33	32
Ditto 40/. shares, Liverpool to Manchester	4	48½	51½
Grand Union (Nottingham and Lynn)		1½	1½
Great Grimsby and Sheffield—50/. shares	5	12½	10
Great Southern and Western (Ireland)—50/. shares	15	16½	16½
Ditto Extension—50/. shares		7½	11½
Great North of England—100/ shares	100	212	208
Ditto New—40/. shares	5	48	42
Great North of Scotland		3½	3½
Great Western—100/ shares	80	147	144
Ditto ½ shares—50/ shares	50	84	86
Ditto Fifths—20/ shares	20	34	34
Guildford, Farnham, and Portsmouth—50/. shares		2½	2½
Harwich—50/ shares	1	1	1
Hull and Gainsborough—25/ shares		—	1
Hull and Selby—50/ shares	50	100	100
Inverness and Elgin—20/ shares	1	—	—
Irish North Midland		—	¼
Kendal and Windermere—25/ shares		12	12
Lancaster and Carlisle—50/ shares	25	39	42
Leeds and Bradford—50/ shares	15	50	45
Leeds and West Riding Junction		—	1
Leicester and Birmingham—20/ shares	22 s	1½	1
Leicester and Bedford—20/ shares	22 s	1½	1½
Leicester and Tamworth—20/ shares	42 s	—	¼
Liverpool and Leeds Direct—50/ shares		3	1½
Liverpool, Manchester, and Newcastle Junction		2½	3½
London and Birmingham	stock.	217	219
London and Birmingham Extension—25/ shares		1½	1½
London and Blackwall	Av. 16/ 13s	9	8½
London and Brighton—50/ shares	50	60½	59½
London and Croydon	Av. 13/ 15s	18½	18½
London and Greenwich	Av. 12/ 15s	10½	10½
London and South Western	Av. 41/ 6s	74	73
London and York—50/ shares		3½	3½
London and Windsor—25/ shares		1	1
London, Warwick, and Kidderminster—50/ shares		2½	2½
London, Salisbury, and Yeovil—50/ shares		2½	3½
Londonderry and Coleraine—50/ shares		6	5½
Londonderry and Enniskillen—50/ shares		2½	5
Lynn and Ely—25/. shares		6	5½
Lynn and Dereham—25/ shares		4½	6
Manchester and Leeds—100/ shares	76	130	130
Manchester and Birmingham—40/ shares	40	69	70
Ditto ½ shares—10/ shares	4	10½	9½
Manchester, Buxton, and Mallock—20/ shares	42 s	4½	2½
Manchester and Southampton	2	—	2½
Midland	Stock	141	139
Ditto Birmingham and Derby	Stock	113	110
Midland Great Western (Irish)—50/ shares		—	—
Ditto Extension to Sligo		—	—
Newcastle and Berwick—25/ shares	5	11	11
Newcastle and Carlisle—100/ shares	100	113	113
Newcastle and Darlington Junction—25/ shares	25	54	54½
Ditto New (Brandling)—25/ shares	15	40½	45
Newport and Abergavenny		2½	2½
Newry and Enniskillen—50/. shares		2½	3
Newark, Sheffield, and Boston—25/ shares		2½	2½
North British—25/ shares	15	21½	22
North Devon	2	1½	1½
Northern and Eastern—50/ shares	45	64	63
North Kent and Direct Dover—50/ shares		2½	2½
North Staffordshire—20/ shares	42 s	7½	4½
North Wales—25/ shares		3½	4½
Norwich and Brandon—20/ shares	14	22	21
Northampton, Banbury, and Cheltenham	2	2½	2
Nottingham and Boston—20/ shares		1½	2
Nottingham, Erewash Valley, and Manchester		1½	3
Oxford, Worcester, and Wolverhampton	12½	14½	13½
Oxford, Gosport, Portsmouth, and Southampton—20/ shares	42 s	2½	2½
Portsmouth Direct—50/ shares		2½	3
Preston and Wyre—50/ shares	50	30	30
Richmond—20/ shares	5	9	10
Rugby and Huntingdon—20/ shares	1	1½	1½
Scottish Central—25/ shares		7½	13
Scottish Midland—25/ shares		5	1½
Sheffield and Lincoln—25/ shares		1½	3½
Sheffield and Manchester—100/ shares	100	120	119
Shrewsbury, Wolverhampton, Dudley, & Birm.—50/ shares		2½	3½
Shrewsbury, Hereford, and North Wales		2½	2½
Shrewsbury and Birmingham		2½	3½
Somersetshire Midland		2½	2½
South Devon—50/ shares	20	27	28
South Eastern and Dover	Av. 33/ 2s 4d	35	35
South Midland—20/ shares		22 s	5½
South Wales—50/ shares		2½	3½
Staffordshire and Shropshire—50/ shares		2½	5½
Staines and Richmond—20/ shares		1	1½
Trent Valley—20/ shares	2	16½	15
Trent Valley and Holyhead Junction—20/ shares		1½	2½
Warwick and Cheltenham—20/ shares		1½	3½
Waterford and Kilkenny—20/. shares	3	2½	2½
Welsh Midland		2½	2½
Wexford and Carlow		2½	1½
Wilts, Somerset, and Weymouth—50/ shares		2½	3
Worcester, Shrewsbury, and Crewe Union		1½	—
Yarmouth and Norwich—20/. shares	20	27	26
York and Carlisle		2½	2½
York and North Midland—50/ shares	50	102	104
Ditto Scarborough Branch—25/ shares	25	50	51
Ditto Selby—50/ shares	20	67	70
Ditto Extension—25/. shares	5	26	24

FOREIGN RAILWAYS.

Boulogne and Amiens—20/ shares	8	7½	7½
Bordeaux and Toulouse and Cette (Mackenzie)—20/ shares	2	1½	1½
Bordeaux, Toulouse, and Cette (Espaiste)—20/. shares	2	1½	1½
Central of Spain—20/ shares	2	1½	1½
Dendre Valley—20/ shares	2	¼	¼
Dijon and Mulhouse—20/ shares	2	2½	2½
Dutch Rhenish—20/ shares	5	7½	6½
East Indian		1½	1
Great Northern of France (constituted)	4	13	10½
Great Paris and Lyons—20/ shares	2	2½	2
Jamaica and South Midland Junction—20/ shares	1	2½	2½
Jamaica North Midland	1	1	¼
Jersey	1	1	1
Louvaine and Jemappe—20/ shares	4	2	1½
Lyons and Avignon—20/ shares	3	2	1½
Luxembourg	2	2½	2
Namur and Liege—20/ shares	4	2½	2½
Orleans and Vierzon—20/ shares	10	15	15
Orleans and Bordeaux—20/ shares	6	10	9½
Over Yssel—20/ 16s 8d shares	4/ 3s 4d	2½	2½
Paris and Lyons (Lafite)—20/ shares	2	2½	2½
Paris and Lyons (Ganneron's)—20/ shares	2	3	3
Paris and Lyons (Calon's)—20/ shares	2	2	2
Paris and Strasbourg (Ganneron's)—20/. shares	2	2	1½
Ditto (Compe de l'Est)	2	1½	1½
Ditto (Aymard's)	2½	—	2½
Paris and St. Quentin—20/ per share	2	2	2
Paris and Orleans—20/ shares	20	46	45
Paris and Rouen—20/ shares	20	36½	37
Royal North of Spain—20/ shares	2	1	1½
Rouen and Havre—20/ shares	16	27	25½
Sambre and Meuse—20/ shares	6	4½	4½
Strasburg and Basle—14/ shares	14	10	10
Tours and Nantes (Mackenzie)—20/ shares	2	4½	4½
Ditto (Lefebvre's)—20/ per share	2	1½	2
Verona and Ancona (Italian and Austrian)	3	2½	1½
West Flanders	4	2½	3½

PRICES OF MINING SHARES.

BRITISH MINES. Shares.	Company.	Paid.	Price.
235	Andrew and Nangilles	25	75
4000	Bedford	2½	5½
100	Botallack	175	400
10000	British Iron, New, regis.	10	22
—	Ditto ditto, scrip	10	23 4
9000	Blaenavon	50	40 2
120	Brewer	—	40
128	Bushick Consols	—	40
100	Bwich Cwmorlin	20	300
100	Barristown	17	260
320	Birch Tor Tin Mine	10	13
5000	Con. Tretoil Mining Ass.	3	1
128	Cosheen	20	200
114	Charlestown	—	240
3200	Cornubian Lead Co.	3	1½
128	Comfort	—	25
2560	Cook's Kitchen	—	6
1000	Carn Brea	15	80
1000	Callington	10	20
256	Caradon Wh. Hooper	9	10
256	Caradon Consols	45	65
256	Caradon Copper Mine	4½	6½
256	Caradon Mines	4½	36
256	Caradon United	19	24
128	Creeg Braws	120	80
1900	Combinartin	5½	8
340	Craddock Moor	5	60
128	Condurrow	10	80
1000	Copper Bottom	1	5
1024	Devon & Courtney Con.	½	6
186	Dolcoath	—	80
1000	Dhurgoa	2	5
10000	Durham County Coal	45	9
128	East Pool	5	50
94	East Wheal Crofty	—	450
128	East Wheal Rose	50	1500
—	East Wheal Albert	1	5
256	East Wheal Alfred	2	10
9000	East Tamar Consols	1	3½
123	East Wheal Seton	2½	12
512	Fowey Consols	—	80
244½	Grambler & St. Aubyn	—	50
100	Great Consols	1000	400
1000	Godolphin	—	35
256	Gonamena	30	120
20000	Galvanised Iron Co.	10	11½
100	Grogwinion	5	20
1000	Gunnis Lake	1½	3
128	Gover	23	200
10000	Hibernian	12½	1
1000	Holmbush	14	25
128	Hallenbeagle	—	50
1000	Hamon	5	3
800	Hawkmoor	3	6
4000	Harrowbarrow Old Mine	1½	2½
256	Herodsfoot	3	5
—	Ivy Tor	—	16
160	Levant	—	150
128	Lanarth & Penstruthal	—	180
1000	Lewis	5	6
128	Ludcott	3	3
256	Lambo	5	12
20000	Mining Co. of Ireland	7	12
2800	Marke Valley	10	4½
200	Nanterrow Consols	10½	8
70	North Roskear	—	630
200	North Holmbush	—	15
160	North United	41	45
256	North Wheal Rose	22½	50
256	North Treburget	2½	10
100	North Pool	11	45
15000	Northern Coal Co.	23	2
128	North Wh. Providence	2½	10
600	Old Delabole Slate Co.	25	45
128	Par Consols	—	500
256	Penhallow Moor	15	5
128	Pen-y-Cefn Mine	50	55
100	Penrhiw	30	65
512	Plymouth Wh. Yeoland	1½	3½
10000	Rhymney Iron	50	33 4
256	Rose Consols	10	7
1000	Rosewall Hill	1	2½
2500	Silver Valley	2	3½
800	South Towan	10	1½
1000	Stray Park	43	19
128	South Wheal Basset	—	240
128	South Caradon	5	400
124	South Wh. Francis	—	40
256	St. Austell Consols	6	60
256	South Wheal Rose	2	3
128	South Yeoland	11½	15
260	South St. George	9½	14
256	South Trelawney	4½	12½
256	Sourton Consols	1	3
130	Trethellan	5	100

BRITISH MINES—continued. Shares.	Company.	Paid	Price
128	Trewavas	—	40
96	Treavean	10	300
128	Tokenbury	102	80
256	Trenow Consols	—	170
120	Treviskey and Barrier	61	220
8000	Treleigh Consols	6	3½
9000	Tamar Consols	3	6
6000	Tincroft	7	15
128	Trewellard	13	25½
1024	Trelawney Consols	1	2
256	Ting Tang	37	35
4000	United Hills	5	4½
100	United Mines	300	900
6000	Wicklow Copper	5	15
512	West Fowey Consols	40	35
384	Wheal Franco	23	55
128	Wheal St. Andrew	65	20
127	Wheal Virgin	—	20
256	West Caradon	40	375
3845	West Wheal Jewel	10½	3½
—	West Kekewich Consols	—	3½
120	West Truthellan	5	40
128	Wheal Rose	40	20
256	West Wheal Tolgus	16½	18
1000	Wheal Harriet	½	2½
128	Wheal Penrose	—	5
128	Wheal Providence	16	120
68	Wheal Clifford	—	500
256	Wheal Albert	10	12
128	West Basset	10	24
128	Wheal Aoland	13	14
256	Wheal Sisters	22½	73
99	Wheal Seton	150	375
200	West Seton	—	40
128	Wheal Henry	—	10½
110	Wheal Hope (Zennor)	14	18
256	Wheal Hope	7	4½
4000	Wheal Martha Consols	3	3
130	Wheal Trelawny	15	232
256	Wh. Mary Ann	5	47
256	Wheal Norris	9	12½
256	Wheal Trevenna	4	4
256	Wheal Trewennan	—	10
107	Wheal Trevilson	10	5
128	Wheal Catherine	5½	19
256	West Providence	—	7½
256	Wheal Robins	13	3
256	West Wheal Treasury	12	18
256	West Wheal Shephard	2	5
128	Wheal St. Cleer	21½	45
128	Wheal Reeth	1	60
256	Wheal Gill	17½	18
128	West Cargoll	2	15
256	Wheal Mary	4	5
256	Wheal Concord	8	10
128	Wheal Venland	2½	5
256	West Wh. Friendship	—	5
128	Wheal Prospect	4	9
256	Wheal Victoria	2	6
240	Westerlake	3	3
1024	Wheal Maria	1	700
256	Wheal Fortescue	1½	23
2560	West Wh. Maria	½	4½
128	Wheal Pollard	5	20
512	Wheal Sarah	2½	—
256	Wh. Cleveland	2½	5
256	Wh. Mexico	2	8
256	Wheal Boscastle	3½	9
265	Wheal Kendall	10½	11
128	Wheal Trannack	19	25

FOREIGN MINES.			
5000	Alten Mining Company	14½	1
15000	Asturian Mining Co.	5	3½
10000	Anglo-Mexican Co.	100	3
3374	Ditto Subscription	25	4
2000	Bolanos	150	4
12000	Ditto Scrip	15	4½
10000	Brazilian Imperial	21	5½
10000	Cata Branca (Braz. Co.)	6½	—
12000	Cobre Copper Co.	40	19½
8500	Colombian Co. regis.	55	} 4½
5000	Ditto Scrip	—	
10000	Copiapo Mining Co.	14	1½
20000	General Mining Ass'n.	20	14
5051	Mexican Company	59	6
12000	Mocanbas & Cocaes	25	4½
29320	Rl. del Monte, regis. / Ditto unregistered	28½	3½ / 4
	Ditto Red Debentures	—	19
	Ditto Black ditto	—	17
	Ditto Loan Notes	150	117
7000	Royal Santiago	10	15
2000	Pachuca Mines	3	2
11000	St. John del Rey	15	7
43174	United Mexican	28½	4½

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Last Div.	Traffic Returns. 1845	1844
Arbroath and Forfar	15	£140,782	2½ p.c.	£ 179 18 11	£154 7 6
Chester and Birkenhead	15	520,640	2½	503 0 4	421 5 4
Dublin and Drogheda	32	631,258	4	651 0 6	548 10 9
Dublin and Kingstown	6	349,736	9	636 6 5	655 1 10
Dundee and Arbroath	17	153,596	4	250 12 4½	243 18 8
Durham and Sunderland	19	302,118	2	*659 3 1	741 3 6
E. Counties & North. & East.	124½	4,090,328	5	6123 0 4	3585 0 10
Edinburgh and Glasgow	46	1,686,226	6	2327 3 2	1901 15 11
Glasgow, Paisley, and Ayr	51	1,104,773	6	1809 4 6	1419 12 11
Glasgow, Paisley, & Greenock	23	806,134	2	763 8 11	676 6 10
Grand Junction Company †	98	2,597,317	10	—	11309 1 10
Gravesend and Rochester	6	85,000	5	111 19 4	—
Great North of England	45	1,296,196	6	—	1521 0 4
Great Western	220	7,717,043	8	15626 9 5	13035 2 8
Hartlepool	—	—	—	1172 0 0	—
London and Birmingham	176	6,997,065	10	31028 0 6	13203 10 10
London and Blackwall	4	1,078,851	1½	717 2 0	642 6 0
London and Brighton	56	2,653,673	4	3755 5 1	3579 19 11
London and Croydon	10	842,592	3½	1224 16 9½	932 0 2
London and South-Western	93	2,620,724	9	5006 17 7	4986 0 3
Manchester and Birmingham	31	1,969,062	6	3643 16 6	2854 16 8
Manchester & Leeds	51	3,972,869	8	8703 13 3	6199 3 4
Manchester, Bolton, & Bury	10	805,968	5½	893 4 7	804 13 3
Midland Company	179	6,284,631	6	15117 16 10	8442 2 6
Newcastle and Carlisle	61	1,137,385	5	1603 8 9	1573 8 5
Newcastle and Darlington	22½	1,156,379	8	2502 13 5	1010 14 6
Newcastle and North Shields	7	316,869	5	415 0 0	319 4 9
Norfolk	—	—	—	946 3 2	—
North Union, Bolton &c.	32	1,060,551	6½	1442 13 3	1447 18 6
Preston and Wyre	19	422,014	2	350 2 1	316 12 7
Sheffield and Manchester	10	1,313,225	5	—	631 5 11
South-Eastern and Dover†	88	4,264,924	3½	5162 5 6	4589 8 1
Taff Vale	30	611,073	3½	1033 11 10	900 19 4
Ulster	25	358,353	5	—	623 3 2
Yarmouth and Norwich	20½	250,037	5	—	174 19 3
York and North Midland	53	1,279,951	10	4742 1 1	2054 2 10
Paris and Orleans	82	2,082,916	8	—	4886 9 0
Paris and Rouen	84	1,995,306	9	—	3599 0 0

* Including Liverpool and Manchester. † Including the Greenwich line.

COAL MARKET, LONDON.

MONDAY.—Price of coals per ton at the close of the market:—Bates's Hartley 15 6—Chester Main 15 3—Davison's West Hartley 16 6—Hasting's Hartley 16 6—Hedley's Hartley 15 3—Holywell Main 16 6—North Percy Hartley 15 6—New Tanfield 14 6—Original Tanfield 14—Old Pontop 13 6—Ord's Redheugh 14 6—Pontop Windsor 14 3—Ravensworth's West Hartley 16 6—Smith's Pontop 14—West Hartley 17—Wylam 16 3—Wall's-end Bell and Brown 16 3—Harton 16—Hilda 15 9—Hotspur 15 6—Killingworth 15 6—Northumberland 15 6—Walker 16—Wharncliffe 16—Eden Main 16 to 16 3—Braddyll's Hetton 17—Haswell 17 9—Hetton 17—Lambton 16 9—Pemberton 15 9—Russell's Hetton 16 6—Shotton 17—Stewart's 17—Usworth 15 3—Caradoc 17—Hartlepool 17—Heugh Hall 16—Kelloe 16 9—Adelaide 16 6—Adelaide Tees 16 9—Maclean's Tees 15 6—South Durham 16—Seymour Tees 16 6—Tees 16 9—West Hetton 15 9—West Tees 15 6—Witton Park 15—Woddefield 13 9—Cinders 22 6—Cowpen Hartley 16 6—Derwentwater Hartley 14 3—Hartley 15 6—Sidney's Hartley 16 6—W. Hartley Netherton 16 6.—Ships 157.

WEDNESDAY—Adair's Main 15—Buddle's West Hartley 16 3—Carr's Hartley 16 6—Davison's West Hartley 16 6—Hasting's Hartley 16 6—Hedley's Hartley 15—Holywell Main 16 6—Old Pontop 13 6—Ord's Redheugh 14 6—Pontop Windsor 13 9—Ravensworth's West Hartley 16 6—Stewart's Hartley 15—Taylor's West Hartley 15 9—Tanfield Moor 17—Townley 15 6—West Hartley 16 9—West Wylam 16 3—Wall's-end Bell and Brown 16 3—Bell Robson 15 9—Heston 16—Killingworth 15 6—Newmarch 15 3—Eden Main 16 6—Braddyll's Hetton 17—East Hetton 16—Hetton 17 3—Hylton 15—Lambton 17—Pemberton 16—Russell's Hetton 16 6—Shotton 17—Stewart's 17—Caradoc 17—Hartlepool 17 3—Heugh Hall 16 3—Kelloe 16 9 to 17—Tennant 16—Adelaide Tees 16 9—Cowndon Tees 16—Eden, Hartlepool 15 6—Gordon 15 6—South Durham 16—Woddefield 14 3—Cowpen Hartley 16 6—Derwentwater Hartley 14 6—Sidney's Hartley 16 6—West Hartley Netherton 16 6.—Ships arrived, 107.

FRIDAY.—Adair's Main 15—Buddle's West Hartley 16 6—Bates' Hartley 15 3—Clavering's Tanfield 13 6—Davison's West Hartley 16 6—Hastings' Hartley 16 6—Hedley's Hartley 15—Holywell Main 16 6—Nelson's West Hartley 16 6—Original Tanfield 14—Old Pontop 13 3—Ord's Redheugh 14—Pontop Windsor 13 9—Ravensworth's West Hartley 16 6—Taylor's West Hartley 16—Tanfield Moor 17—West Hartley 16 6—Wylam 16 3—Wall's End Gosforth 16 6—Hotspur 15 9—Killingworth 16—Newmarch 15—Wharncliffe 16 6—Belmont 16 9—Braddyll's Hetton 17 6—East Hetton 16 6—Haswell 18—Hetton 17 6—Lambton 17 3—Russell's Hetton 17—Stewart's 17 6—Caradoc 17 3—Kelloe 17 3—Barrett 16 6—Brown's Deanery 16 6—Brown's Deanery Steam 15—Eden Hartlepool 16—Gordon 15 9—Maclean's Tees 16—Seymour Tees 17—Tees 17—West Tees 15 6—Witton Park 15—Cowpen Hartley 16 6—Sidney's Hartley 16 3.—Ships arrived, 82.

ATMOSPHERIC RAILWAYS.

TO RAILWAY COMPANIES, ENGINEERS, MANUFACTURERS, IRONMASTERS, AND TO ALL OTHERS WHOM IT MAY CONCERN.

NOTICE is hereby given, that the Atmospheric System, included in Pinkus's First and Second Patents, of 1834 and 1836, and which is now about to be adopted on the Croydon line, is, nevertheless (although practicable), but a crude and imperfect one of Mr. Pinkus's several systems, and involves an unnecessarily large outlay of capital in the construction, and an unnecessarily heavy expenditure in the annual working thereof; whilst, by Pinkus's new Systems, only about one-half the expense in constructing, and one-half in the working and annual maintenance, is incurred. The former long valve is dispensed with, and the loss by leakage thereof prevented—one line of pipe suffices for a double line of railway; each train is made to move under the influence of two stationary engines, at the termini of a section, simultaneously, by which means the amount of motive power is reduced by one-half, yet affording the required amount of propelling power. The stationary engines work constantly, husbanding power at intervals, when trains are not moving, thus inducing much economy. The propelling main is reduced in size, to one-half the capacity required by the former system; yet affording the same amount of propelling power. Trains may be more frequently moved, and without danger. And by a further system (being the Atmospheric Locomotive), one line of pipe suffices for a double line of railway; the train, as before-mentioned, moves under the influence of two stationary engines at the termini of a section simultaneously; *the column of air in the pipe does not move with the velocity of the load*; the immense loss of power consequent upon friction of air moving rapidly in the tube, is thus avoided; the quantity of air acted upon for an equal amount of propelling power, is only a fifth part of the quantity necessary by the former system—equal flexibility with the common steam locomotive system is obtained, the locomotive atmospheric engines being capable of moving forwards and backwards, as by the steam locomotives, more frequent trains may be moved without loss of time, and without waiting for the re-exhaustion of the propelling tube, *the power of the locomotive is greatly increased on inclined planes, without enlarging the tube, and perfect safety, from the possibility of a train moving off the rails is secured.*—These are advantages which Pinkus's other first system, about to be used on the Croydon Line, does not possess.

Licenses will be granted, and information may be obtained, on application to the Secretary, at the Atmospheric Railway Offices, West Strand, Trafalgar-square, London. Communications addressed to Mr. Alfred Gregory, Sec. pro tem. 26

SOMERSETSHIRE AND NORTH DEVON JUNCTION RAILWAY, AND PORLOCK HARBOUR AND DOCK COMPANY.

The committee of management have great satisfaction in announcing that the Parliamentary Plans and Sections of this railway, describing also the contemplated Docks, Pier, and Improvements at Porlock, were duly deposited at the Board of Trade, and with the Clerk of the Peace for the county, on Saturday, the 29th ult., and they feel assured that the high-standing and experience of the engineers and surveyor by whom they were prepared, will be a sufficient guarantee that their accuracy is such as will bear the test of examination in the Houses of Parliament. The committee have exercised the power committed to them by the prospectus of reducing the line, and they have, for the ensuing session of Parliament, abandoned that portion which was contemplated between Watchet and Bridgewater—adopting only the trunk line from Porlock to Carhampton, and the branch, or extension, line thence to Sampford Brett—forming, by arrangement with the Bristol and English Channels Company, a direct and continuous line from Porlock to Taunton, and thence by the Bristol and Exeter Railway to Bridgewater, at a very inconsiderable increase of distance. By this arrangement a short line, of sixteen miles and a half only, will be made by this company; and the valuable seaport and docks to be established at Porlock (which promises to form a most important portion of the company's project, and vastly to extend the commercial interests of the county town and neighbourhood) will be brought into immediate proximity with Taunton and Bridgewater, and direct communication between Porlock Harbour, Bristol, and the metropolis, will be effected. The committee of management, therefore, feel assured, that they have not only, by this arrangement, consulted the best interests of the shareholders, but have adopted that course which is most likely to insure their Bill in Parliament, and avoided the opposition which might otherwise have arisen on the line from Watchet to Bridgewater.

In order to meet the convenience of applicants for shares in the present depressed state of the money market, the committee have resolved on suspending their call for that portion of the deposit which is required for Parliamentary lodgments, until such time as it shall be necessary for them to provide for its due payment into court, and to require a preliminary instalment of 2s. per share only, in order to meet the legitimate expenses of carrying the Bill into Parliament.

Prospectuses may be had, and applications for shares, continue to be received at the companies offices and by the respective agents, notified in former advertisements.

In the allotment of shares, which will shortly take place, a preference will be given to parties locally interested in the line and trade of the neighbourhood. 29

By order of the committee,

35, Moorgate-street, Dec. 9, 1845. J. G. HUGHES, Secretary.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.

Bank Stock, 201 2
3 per Cent. Reduced Ann., 92⅝ ⅜ ⅛ ⅜
Consols for Account, 92⅝ ⅜ ⅛ ⅜
Exchequer Bills, 23 21 pm.
Belgian, 4½ per Cents., 94⅝ 5
Danish, 3 per Cents., —
Dutch, 2½ per Cents., 59⅝ 9 ⅝
Portuguese, 4 per Cents., 59 8
Russian, 5 per Cents., 112½
Spanish, 5 per Cents., 28 7⅛
ditto, 3 per Cents., 38 7⅛
Brazil, 5 per Cents., 80½ 79
Chili, 3 per Cents., 97 5½
Colombia, 6 per Cents., 16
Mexican, 5 per Cents., 30 29½
Peru, 6 per Cents., 35

THE SHARE MARKET.

MINES.—A reference to our share list will show that no falling off has taken place in the public confidence in mining property as a safe and highly productive source for speculation or investment. Mining adventures of considerable importance are almost daily being brought forward in localities where, though in years long gone by, they have been worked to considerable extent, they have long lain dormant, and the sound of the blast, the pick, and gad, had for years—nay, in some cases, centuries—ceased to be heard. The Mendip Hills, in Somersetshire; the limestone districts of Carnarvon and Cardiganshires; and many other localities, where the relics of ancient mining are still to be seen, are being explored with spirit, and which, under the present state of geological and chemical knowledge, will, it is likely, in most instances, where mines are considered worthy the outlay, turn out well for the adventurers. It is rather singular that while scarce a mining share is offered for sale by auction, in London, Mr. George Carne, of Plymouth, has a very much greater number of mining shares at his sales than railways, and for which there is much more spirited competition. We are glad to see that that gentleman's spirited attempt to open a market for mining shares has met with such success. For prices we refer to our list. We shall feel obliged to our Cornish and Devonshire friends at all times for such information as can be afforded. We

had been raised, and, with the exception of a trifling amount, all paid up. It was resolved and carried, that 60,000*l.* additional capital be raised by the creation of an adequate number of new shares, or otherwise, upon such conditions as may be hereafter determined, the object of which is to complete the Duffryn line, and to provide additional locomotive power. By the completion of this line, it was expected the traffic would increase by 1000 tons of coals a-day, from the Aberdare valley. It was afterwards resolved that the shares (which amount to 60,000*l.*), now authorised to be raised, be converted into capital stock, divided into, and transferable in any amount, bearing 4½ per cent. interest.—On Friday, the 5th instant, a meeting of the provisional directors of the Shropshire Mineral Railway Company was held at Newport, Shropshire, to receive reports from their various agents, respecting the progress made regarding the deposition of plans, sections, &c., and estimated traffic; and also with regard to their exact position in respect to competing companies. It was reported, both from the engineers and traffic takers, that of the extent of line proposed to be constructed, twenty miles of it would command an amount of traffic sufficiently ample to pay a dividend on the whole capital, and it would form one amongst the first paying lines in the kingdom. It was further reported, that all the plans and section had been deposited at the various places required by law, in good time.—The committee of the Dudley, Madely, Broseley, and Iron-bridge Company held a meeting on Thursday last, at the Stork Hotel, Birmingham, for the purpose of stopping the impending process. After long discussion, it was decided that in consequence of the failure to lodge the plans and sections in due time, and their generally defective state, not to proceed with their scheme in the next session of Parliament, but to return to the shareholders 2*l.* per share, reserving what remains of the deposits (12s. 6d. per share) to meet the expenses already incurred, which were stated to be 5s. 6d. per share, and the further expenses required in order to proceed in the following session. This resolution gave general satisfaction, and there is no doubt that, in 1847, they will obtain their bill, as it will be a line of great importance to that district.

RAILWAY ARRANGEMENTS.—The Central Kent have made arrangements with the South Eastern, by whom the construction of the line will be effected. In virtue of this arrangement, the scripholders will be entitled to a distribution at par of certain shares of the South Eastern, distinguished as No. 4. It is said, that several shareholders in the London and York line are favourable to the proposed amalgamation with the Eastern Counties, but that some landowners in Bedfordshire form one of the principal obstacles to the arrangement,—which, however, will be better understood from the proceedings at a meeting of the company, which has been convened for this day (Saturday), at the London Tavern.—An arrangement is stated to have been effected between the directors of the Dublin and Kingstown Railway, and the provisional committee of the Dublin, Wicklow, Wexford, and Waterford Company—the latter having agreed to take a lease of the former at a fixed rent of 34,000*l.* per annum, and one-half of the gross receipts of the company, over 55,000*l.* per annum, which has been the assumed gross-rental for the next year, and on which the calculations have been founded.—A tunnel of 3,482 yards will, it is said, be required on the proposed York and Carlisle, at a depth of 120 yards.—On the Leeds and Carlisle, a tunnel will also be required, in the township of Mallerstang, of 5,499 yards, or nearly three miles and a quarter in length. The latter will have to pass over a viaduct, on the south of Appleby, 500 yards in length—having twenty arches, the centre one being 130 feet high.—The electric telegraph is now in full play on the railway between Fleetwood and Kirkham, and will be shortly in operation on the whole length of the line to Preston.—There have been thirty-three plans, &c., deposited at the Board of Trade for Wiltshire lines, and which have been duly lodged with the clerks of the peace, and twelve from the South Eastern Company's projected lines.—Mr. Brassey, contractor for the Bury and Ipswich line, has presented 100*l.* each to the Ipswich and Suffolk Hospitals, in acknowledgment of the aid rendered by those institutions, to the workmen who have suffered from accidents on the line.—The next dividend of the Manchester and Leeds is expected to be 10 per cent.—It is stated, upon good authority, that it is the intention of Government, with reference to the numerous railway bills which are to come before Parliament in the ensuing session, that the select committees on the Scotch lines shall sit in Edinburgh, and in Dublin for such as are connected with Ireland. This information will be hailed, we are quite certain, by the inhabitants of Scotland and Ireland with the highest satisfaction, as it will be the means of saving many unnecessary expenses to the parties or projectors of new schemes.—The works on the Huddersfield and Manchester Railway have commenced, and those on the Penistone brahch of the Huddersfield and Sheffield are progressing. The keystone of the splendid bridge, which spans the river Eremon, near Ynwath-hall, on the Lancaster and Carlisle Railway, was laid on Thursday.—An acceleration of the mails, so as virtually to bring the towns in East Lincolnshire, a day nearer London is about to take place by the conveyance of the bags, *vi a* Peterborough.—An interdict has been laid against the North British Railway Company, by a gentleman, named Reuton, residing at Mardington in consequence of the company having taken possession of ground for the purpose of, the railway, which had not been applied for in their bill last session.

The following are the present prices of a few of the most favoured lines:—London and Birmingham, stock, 212 to 14; South Western, shares, 73 to 5; Brighton, 61 to 2; Great Western, 67 to 70, premium; London and York, 1¼ to ¼, premium; Manchester and Leeds, 50 to 55 premium; South Devon, 1 to 3 premium.

The French lines have improved, and more doing. Paris and Orleans, 45 to 7 per share; Paris and Rouen, 37 to 8; Rouen and Havre, 9 to 10 premium; Paris and Strasbourg, par to ¼ premium; Paris and Lyons (Lafitte's) par to ¼ premium.

The following is the increase in the traffic of the following lines for the twenty-two weeks of the present half-year, as compared with the corresponding period of 1844:—

Chester and Birkenhead	£2945	Manchester and Birmingham	£18910
Eastern Counties	35126	Manchester, Bolton, and Bury	1667
Edinburgh and Glasgow	11707	Manchester and Leeds	21167
Glasgow and Greenock	1938	Midland Company	66537
Glasgow, Paisley, and Ayr	8762	North Union	3021
Great Western	38151	Preston and Wyre	5019
London and Birmingham	112207	Sheffield and Manchester	11473
London and Brighton	16406	South Eastern	49193
London and South-Western	11822	Ulster	1606

LEEDS, THURSDAY.—Our market continues to exhibit the firmness of tone which characterised it last week; the demand keeps pace with the supply, and stock is rather scarce, than pressed upon the market. As we anticipated early in November, most of the new schemes remain at merely nominal quotations; but, unlike the position of matters three weeks ago, a distinction is now made between the good and the bad. Bradfords have reached 30*l.* pm., after having declined as low as 23*l.* pm.; as it becomes more generally known that the arrangement with the Manchester and Leeds, at the present dividend of that company, will secure to the Bradford holders a return of 4*l.* 8*s.* 6*d.* per annum on their shares—when 41*l.* is paid, we shall see a further improvement. The difficulty in the Croydon and Brighton amalgamation, it is expected, will be removed; the proprietors in both companies will deserve reprehension, if they allow any personal feelings on the part of the directors of either body to interfere in the amicable adjustment of the points on which a difference of opinion exists. To those who have confidence in the ultimate adoption of the arrangement, Croydons, at 1*l.* pm. (18¾*l.* being par), are much more tempting than Brightons at 11¼*l.* pm. Manchester and Leeds stock is firm, and the meeting of the 17th, it is expected, will confirm the recent advance in price. West Riding Unions are in demand at 5¾*l.* per share; Huddersfield and Sheffield, and Leeds and Dewsbury, are alike good.

R. B. WATSON, TOOTAL, and BARFF.

MESSRS. LAMOND'S SALES.—We are happy to see that these sales are again attracting increased attention, and some improvement has gradually taken place in the amounts obtained. Having now become thoroughly established as share auctioneers, their method of conducting the business, and the facilities afforded for transacting this description of it, has secured the public confidence, causes shares to go off at their market value, and which this week has a little improved—considerable advances have taken place in good and *bond fide* lines, while shares in railways in general are easy, and a re-action appears to be gradually taking place. The following are among the best sales on TUESDAY:—Sheffield, Buxton, and Leek Potteries (£1 7*s.* 6*d.* pd.), 18*s.*; Great Kent Atmospheric (£2 10*s.*), £1 17*s.* 6*d.*; Calcutta and St. George's Point (7*s.*), 9*s.* 6*d.*; Paris and Lyons—Lafitte's (£2), £2 4*s.*; Dutch Rhenish (£5), £7 7*s.*; London and Manchester—Rastrick's (£5 5*s.*), £3 18*s.*; Oxford and Cambridge (£1 7*s.* 6*d.*), 19*s.*; North Staffordshire, Churnet, and Potteries (£2 2*s.*), £5 5*s.*; Northampton, Banbury, and Cheltenham (£2), £2 10*s.*; Yarmouth and Norwich (£17), £22; Great Western of Bengal (5*s.*), 9*s.* 6*d.*; Goole and Doncaster (£2 2*s.*), £2 7*s.* 6*d.*; Leicester and Birmingham (£1 2*s.*), £1 1*s.* 6*d.*; Great Eastern and Western (£2 10*s.*), £1 4*s.* 6*d.*; Paris and Strasbourg—Aymard's (£2 5*s.*), £2; Team and Dove Valley (£1 7*s.* 6*d.*), £1 2*s.* 6*d.*; Chelmsford and Bury (£1 7*s.* 6*d.*), £1 2*s.*; Madrid and Valentia (£2), £1 3*s.*; Great Indian Peninsular (5*s.*), 9*s.*; Dartmouth, Torbay, and Exeter (£2 2*s.*), £1 2*s.*

FRIDAY.—Essex and Suffolk (£1 7*s.* 6*d.* pd.), 17*s.*; Caledonian Extension (£2 10*s.*), £2 18*s.*; Grand Union (£1 7*s.* 6*d.*), £1 7*s.* 6*d.*; Perth and Inverness (£2 10*s.*), £1 16*s.* 6*d.*; Leicester and Birmingham, (£1 2*s.*), 18*s.* 6*d.*; East Indian (5*s.*), £1 2*s.* 6*d.*; Calcutta and George's Point (7*s.*), 10*s.*; Great Paris and Lyons (£2), £2 0*s.* 6*d.*; Northumberland and Lancashire (£2 2*s.*), £1 11*s.*; North Staffordshire, Churnet, and Potteries (£2 2*s.*), £4 14*s.*; Dutch Rhenish (£5), £6 6*s.* 6*d.*; Boston, Stamford, and Birmingham (£1 2*s.*), 16*s.* 6*d.*; Welsh Midland (£2 10*s.*), £2 0*s.* 6*d.*; Ceylon (5*s.*), 16*s.*; Isle of Axholme, Gainsborough, and Goole (£2 12*s.* 6*d.*), £2 3*s.*; Dunstable, London, and Birmingham (£5 5*s.*), £5; South Staffordshire, (£2 10*s.*) £3 16*s.*; Goole and Doncaster (£2 2*s.*), £2; Great Indian Peninsular (5*s.*), 9*s.* 6*d.*; York and Lancaster (£2 12*s.* 6*d.*), £1 16*s.*; Direct Northern (£2 10*s.*), £1 12*s.* 6*d.*; Norfolk Estuary (£2 10*s.*), £2 10*s.*; Paris and Lyons—Lafitte's (£2), £2 1*s.* 6*d.*

MESSRS. WICKHAMS' SALES—MONDAY.—No prices received.

MESSRS. WICKHAM'S SALES.—THURSDAY.—Armagh, Coleraine, and Portrush (£1 7*s.* 6*d.* pd.), £1 9*s.*; Boston, Stamford, and Birmingham (£1 2*s.*), £1; Cornwall and Central Devon (£2 12*s.* 6*d.*), £1 8*s.* 6*d.*; Direct Northern (£2 10*s.*), £1 16*s.* 6*d.*; Dover and Bristol (£2 2*s.*), £1 7*s.*; Grand Union (£1 7*s.* 6*d.*), £1 10*s.*; Hull and Barnsley Junction (£2 2*s.*), £2 4*s.*; Irish North Midland (£1 7*s.* 6*d.*), 17*s.* 6*d.*; Leicester and Birmingham (£1 2*s.*), £1; London and Manchester—Remington's (£2 15*s.*), £1 15*s.*; Londonderry and Coleraine (£5), £5; Lynn and Ely (£5), £6 5*s.*; Metropolitan Junction (£2 12*s.* 6*d.*), £2 2*s.*; Norfolk Extension (£2), £1 18*s.*; Northampton, Banbury, and Cheltenham (£2), £2 4*s.*; Shropshire Mineral (£2 2*s.*), £1 11*s.* 6*d.*; Staffordshire and Shropshire (£2 15*s.*), £5; Calcutta, and the St. George's Point (7*s.*), 10*s.* 6*d.*; East Indian (5*s.*), £1 5*s.* 6*d.*; Great Indian Peninsular (5*s.*), 8*s.* 6*d.*; Great Western of Bengal (5*s.*), 9*s.* 6*d.*; Great Western of Canda (£3 10*s.*), £4 3*s.*

THE "GUNDRY" BANKRUPTCY CASE.—We have noticed this case on several occasions, and which relates to the propriety of a compromise with the bankrupt's estate; it was again discussed on Thursday last, and the form of the order arranged. We understood the decision was in favour of Miss Gundry, who gets back her nineteen shares in a copper mine in Cornwall, and it is her intention to amend her petition, and endeavour to obtain the profit which has been realised on them, amounting to nearly 50,000*l.*, which will pay 20*s.* in the 1*l.*, on all the out-standing liabilities, and leave a considerable surplus.

THE FARRINGDON-STREET TERMINUS.—Mr. Creed, the secretary of the London and Birmingham Railway, obligingly exhibited, yesterday, a very beautiful model of the proposed Farringdon-street terminus, promoted by that powerful company: the design is by Mr. Robert Stephenson, and is intended for the joint accommodation of the London and Birmingham and Eastern Counties Railways. From the model, it appears, that the main portion of the site is that of the old Fleet Prison, extending northward to Skinner-street, and eastward to the Old Bailey. Arrangements have been made for carrying on the passenger traffic on the level of the railway—Farringdon-street—whilst by means of lifts the goods are to be loaded and unloaded upon an upper tier of rails, and received or dispatched to the Old Bailey. Care has been taken in the design that the traffic of the streets should not be at all impeded by vehicles standing about the outside of the station, ample provision having been made for them within the walls. The general arrangement has been made with a view to facilitate and expedite the arrival of goods and passengers within the heart of the City, and to afford the greatest amount of accommodation in the smallest possible space.

IMPORTANT MINE SHARES.—FOR SALE BY AUCTION,

by Mr. WILLIAM RICHARDS.—On WEDNESDAY, the 17th day of December instant, will be submitted for sale by Public Auction, at Crotch's Hotel, Hayle, at Two o'clock in the afternoon, in such lots as may suit the convenience of purchasers, 38-128ths PARTS or SHARES of and in all those valuable and productive TIN and COPPER MINES, called WHEAL PROVIDENCE, situate in the parish of GWINEAR, in the county of Cornwall, with the like parts or shares of, and in the ENGINES, MACHINERY, and property belonging.

The above mine is situate in one of the most favoured and prosperous districts in the county, and important discoveries have been made during the past week, and the adventure promises to become a permanently paying one.

The Shares will be positively sold to the highest bidders.

For further particulars, and to inspect the mine, application may be made to the Agents there; and any further information may be had, on applying at the Offices of

Dated Dec. 6, 1845. Messrs. JOHN AND RODD, Solicitors, Penzance.

COPPER ORES.

Sampled Nov. 26, and Sold at Andrew's Hotel, Redruth, Dec. 11, 1845.

Mines.	*Tons.*	*Price.*	*Mines.*	*Tons.*	*Price.*
Carn Brea	98	£4 13 0	Wh. Brewer	80	4 15 6
ditto	81	4 9 6	ditto	47	3 15 6
ditto	80	10 6 0	ditto	46	4 19 6
ditto	79	8 10 0	Wh. Trewavas	63	5 13 6
ditto	76	11 5 0	ditto	61	4 17 6
ditto	56	11 3 0	Ting Tang Consols	100	4 0 6
ditto	54	5 10 0	Wh. Providence	57	3 15 6
ditto	37	5 10 6	ditto	23	6 2 0
ditto	21	2 13 6	ditto	22	9 0 0
Wh. Prosper	74	3 16 0	ditto	15	1 10 6
ditto	73	4 17 6	ditto	12	13 0 0
ditto	72	8 16 6	Wh. Busy	38	1 1 6
ditto	63	4 0 6	ditto	20	2 7 0
Wh. Friendship	59	5 8 6	ditto	19	2 8 0
ditto	45	3 18 0	Wh. Virgin	64	5 18 0
ditto	43	3 1 6	ditto	8	1 2 6
ditto	23	2 8 0	Carn Perran	39	4 13 6
Par Consols	100	6 5 6	ditto	26	3 14 6
ditto	90	6 2 0	W. Fowey Consols	47	4 13 0
ditto	66	2 3 0	Wh. Rodney	31	3 4 0
United Hills	110	3 3 0	East Seton	28	3 17 0
ditto	93	4 10 0	North Basset	24	5 3 0
ditto	26	2 2 0	Redruth Consols	23	8 17 6
Trenow Consols	70	7 0 0	Hanson Mines	22	6 0 6
ditto	59	8 0 6	Treffry's Slag	14	10 3 0
ditto	35	10 16 6	West Grambler	11	5 12 6
ditto	16	3 14 0	West Wh. Maria	10	4 7 0
ditto	10	3 7 0	Relistian	7	3 16 0
			Wh. Uny	2	Not sold.

TOTAL PRODUCE.

Carn Brea	582	£4345	15	6	Carn Perran	65	£253	3	0
Wh. Prosper	451	2162	0	6	West Fowey Consols	47	218	11	0
Friendship					Wh. Rodney	31	99	4	6
Par Consols	265	1373	6	0	East Seton	28	107	16	0
United Hills	229	819	12	0	North Basset	24	123	12	2
Trenow Consols	191	1446	2	6	Redruth Consols	23	204	2	0
Wh. Brewer	153	692	15	6	Hanson Mines	22	132	11	0
Wh. Trewavas	124	654	18	0	Treffry's Slag	14	142	2	0
Ting Tang Consols	100	402	10	0	West Grambler	12	67	10	6
Wh. Providence	99	619	2	6	West Wheal Maria	10	43	15	0
Wh. Busy	77	133	9	0	Relistian	7	26	12	0
Wh. Virgin	72	386	12	0	Wheal Uny	2	not sold.		

Average standard, 1077. 15*s.*—Average produce, 7¼.—Average price per ton, 5*l.* 9*s.* 6*d.*—Quantity of ore, 2626 tons.—Quantity of fine copper, 201 tons 3 cwt.—Amount of money, 1,455*l.* 2*s.* 0*d.*—Average standard of last sale, 112*l.* 18*s.* 0*d.*—Average produce ditto, 7¼.

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—Wheal Maria 1319—Fowey Consols 326—Holmbush 192—Mark Valley 165—Bedford United Mines 105—Wheal Gorland 42.—Total, 2149 tons.

Copper ores for sale on Wednesday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—United Mines 1334—Trosavean 477—South Caradon 360—West Caradon 327—Wh. Maria 302—Par Consols 265—Trethellan 189—Treleigh Consols 130—Penstruthal 45—West Trethellan 36—North Downs 27—Tregothnan Consols 3.—Total, 3495 tons.

*** We are requested to state, that in consequence of Christmas-day falling on Thursday, the Ticketing for that week will be held on Wednesday, the 24th inst.

COPPER ORES.

At SWANSEA, for sale December 17.—Knockmahon 116—107—103—99—82—80—53. Santiago 120—109—103—93—91. Cobre 100—99—75—48. Bearhaven 122—103. Ballymurtagh 94—54—50. Victoria 120—2. Kaw-aw 48—32—11—2. Cronebane 41—40. Chili 43—8—4. Cloga 45. Vigra and Cloga 25—15.—Total 2337 tons.

SILVER-LEAD ORE

Sold on the 1st of December, 1845.

Mines.	*Tons.*	*Price.*	*Total.*
East Tamar Consols	20	£17 15 0	£355 0 0
Callington	82	19 8 0	1590 16 0

Total tons, 102.—Amount of money, £1945 16*s.* 0*d.*

LATEST CURRENT PRICES OF METALS.

LONDON, DECEMBER 12, 1845.

	£	s.	£	s.	d.
IRON—Bars—Wales...*ton*	0	0—	9	0	0
„ ..London ..	0	0—	10	0	0
Nail rods „	0	0—	10	10	0
Hoop(Staf.)„	0	0—	11	10	0
Sheet „ „	0	0—	12	10	0
Bars „ „	0	0—	11	0	0
Scotch pig *b*, Clyde	3	17	6	4	0
Rails	0	0—	12	0	0
Russian, CCND *c* ..	0	0—	——		
„ PSI	0	0—	——		
„ Gouriefl	0	0—	14	10	0
„ Archangel	0	0—	13	10	0
Swedish *d*, on the spot	0	0—	12	0	0
„ Steel, fagt.	0	0—	15	15	0
„ „ kegs *e*	0	0—	15	0	0
COPPER—Tile *f*	0	0—	92	0	0
Tough cake	0	0—	93	0	0
Best selected	0	0—	96	0	0
Ordinary sheets, *ft.*	0	0—	0	0	10½
„ bottoms .	0	0—	0	0	11½

	£	s.	£	s.	d.
TIN—Com. blocks *g*...*cwt.*	0	0—	5	3	0
„ bars	0	0—	5	4	6
Refined	0	0—	5	8	0
Straits *h*	0	0—	4	13	0
Banca	0	0—	4	15	0
TIN PLATES—Ch., IC *i*, *box*	1	14—	1	15	0
„ IX ...	2	0—	2	1	0
Coke, IC	1	9—	1	10	0
„ IX	1	15—	1	16	0
LEAD—Sheet *k* .....*ton*	0	0—	20	0	0
Pig, refined	0	0—	21	0	0
„ common	0	0—	19	0	0
„ Spanish, in bd.	0	0—	18	10	0
„ American ...	0	0—	17	15	0
SPELTER—(Cake) *l*	0	0—	21	5	0
ZINC—(Sheet) *m* export.*	0	0—	30	0	0
QUICKSILVER *n* .....*lb.*	0	0—	0	4	6
REFINED METAL ....*ton*	0	0—	——		

a Discount 2½ per cent. *b* Net cash. *c* Discount 2½ per cent. *d* Ditto.
e In kegs ½ and ¼-inch. *f* Discount 3 per cent. *g* Ditto 2½ per cent. *h* Net cash.
In bond. *i* Discount 3 per cent. *k* Ditto 2½ per cent. *l* Net cash.
m Discount 1½ per cent. *n* Discount 1½ per cent. * For home use it is 32*l.* per ton.

(From our Correspondent.)

IRON.—Welsh and Staffordshire maintain their prices, with a steady demand. Scotch pigs have improved since our last, and may now be quoted at 77*s.* 6*d.* buyers.

TIN.—English has been reduced to 102*s.*, to preserve the proportion between it and foreign. Both English and Foreign are scarce, and the latter is in request.

COPPER, TIN PLATES, LEAD, and SPELTER, are without alteration from the quotations published in last week's *Mining Journal*.

PRICE OF TIN PLATES AT NEWPORT—Nov. 29.

No. IC., per box	£1 11 0	*Wasters*	£0	2	0
No. IX., per box	1 17 0	„	0	3	0
No. IXX., per box	2 0 0	„	0	3	0

GLASGOW PIG-IRON TRADE, DEC. 10.—To-day and yesterday no iron has been offering under 80*s.* per ton; but at this price no transactions have taken place. From the number of sellers to-day, at the above figure, we consider the rise from 72*s.* 6*d.* to 80*s.* as temporary. In the face of a stock, at present considerably over 200,000 tons, and makers now in a position for making fresh contracts, we cannot see how prices can advance.—*Glasgow National.*

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—

Silver bars to Rotterdam	25,000 ounces.
Silver bars to Hamburgh	8,200 „
Silver coin to River Gambia	145 „

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending Dec. 6, was 21,031; amount of money, £87 12*s.* 7*d.*—(Last year, 102*l.* 18*s.* 10*d.*)

CONTINENTAL RAILWAY LEGISLATION.—A most excellent regulation has just emanated from the Prussian Government, which furnishes a good hint to be improved upon by our own and other executives in their future legislation on railways. It is fully expected a law will pass, preventing directors of railway companies from making any further call, until it is clearly proved before the proper officer of the Government, that all money previously received has been properly applied, and for the *bonâ fide* purposes for which it was raised.

ATMOSPHERIC RAILWAYS.—On Monday last, Mr. Henry Cowper Marshall, Mr. Newman Cash, and Mr. C. G. Maclea, being a deputation from the Leeds and Thirsk Railway Company, accompanied by Mr. John Gott and Mr. James Marshall, two of the directors of the Leeds and Dewsbury Railway Company, and by Mr. Bott, their secretary, as well as by Mr. M'Candlish, the assistant engineer, and Mr. Fenton, the secretary, and Mr. Eddison, the solicitor of the Leeds and Thirsk Company, visited the Croydon Railway, near London, to ascertain how far the atmospheric principle might be beneficially applied to other railways. On their arrival they were met by Mr. Wm. Cubitt, the engineer-in-chief of that railway, and Mr. Joseph Samuda, the patentee, and Mr. Benj. Cubitt, the resident engineer, from whom they received a considerable amount of information as to the atmospheric principle, and the working details. Without entering into the particulars, the deputation, on their return, reported that they felt satisfied of the superiority of the atmospheric over the locomotive principle, both as regards speed, safety, and comfort; but that they require further time for inquiry before they can give a positive opinion as to which of the two is the most economical, combining the construction of the road with the expense of working after the railway is completed.—*Leeds Mer*

NOTICES TO CORRESPONDENTS.

The second letter of "N. C." on the Ports of the Asturias, did not reach us until after the first was printed; we were, consequently, unable to comply with his request.

"A Subscriber" (Ashburton).—We shall be glad to hear occasionally from our correspondent respecting the mining operations in his district.

COOK'S KITCHEN MINE.—In answer to several correspondents who have inquired of us why no reports from this mine have appeared for so long a period, we can only reply, that none have lately been received, or they would have been inserted.

"T. W." (Leeds).—We are always obliged for the transmission of local news.

"A Shareholder" (Redruth).—Forward the communication to our office, and we will hand it to the proper parties.

The rate of cabin passage from Liverpool to New York is now 25*l.*, and freightage varies from 15*s.* to 30*s.* per ton.

A copious Index to the contents of the Journal, will, as heretofore, accompany the last Number in the year. The earlier volumes can be inspected at the office.

Several excellent railway statistical works have already been published, by Longman, Tilt, Effingham Wilson, and others, besides the usual periodical publications, which contain all particulars likely to prove of importance or interest to capitalists or speculators, and we should almost doubt the possibility of a new one paying the expense of its production.

We are constantly receiving complaints of the irregular delivery of the Journal in several parts of Spain. We can assure our Infiesto correspondent and others, that all papers are regularly posted by us, and the cause of complaint must rest either with the Post-office authorities here or in Spain.

We have received the reply of Mr. A. Burt to Mr. Sloper's communication respecting Maurasse's Filter, which shall appear in our next.

THE MINING JOURNAL

And Atmospheric Railway Gazette.

LONDON, DECEMBER 13, 1845.

*** *We should feel particularly obliged by correspondents being careful in legibly addressing their communications—to the Editor, at the Office, 26, Fleet-street, London—several letters having lately miscarried, and their contents, consequently, been unattended to.*

The advantages of instruction, in order to a due and masterly cultivation of the arts, is generally felt and admitted, and education, which is but instruction somewhat extended, and woven into system, would not move by the increased strength and more accurate direction it gave the hand of the operator, than by the reflex light it laid upon his entire path, and contributed to the success and the facility to his labours. It is for these reasons, and for others having the same object, as well as the same origin, that we have ever encouraged, as far as it lay with us to do so, the foundation of normal schools throughout the mining districts. It is level with the reason and probabilities of the case, that rudimental training in chemistry, geology, and practical mechanics, would vastly add to the every day efficiency of the setts and captains, by whose diligence and skill the unbounded mineral wealth of this country is wrought and raised to the surface. It is probable also that, in addition to greater ease in the working, and greater productiveness in the results, a more general application of elementary science to mining operations, would considerably lessen their expense. We are aware that, to a certain extent, and in the larger movements of mining apparatus, such application of practical science has been a long time, and very usefully, made; but we apprehend there is room for its extension, and think it would add to the popularity of mining operations, if their ingenuity were throughout on a level with their earnestness. We do not wholly overlook the moral aspects of the case, being persuaded that instruction will do for those immured in mines, what it does in every other instance, and for every other creature—increase the happiness and confirm the hope of those who receive it. In Cornwall, we are happy to see that some steps have been taken by Sir C. LEMON and other distinguished mining proprietors, to sow the seeds of educational institutions of a kind, and with an object, similar to those to which we have referred; and we do not at all doubt, that gentlemen of their class will find their permanent account in raising the tone, and improving the character of that interesting mining population, at the head of which, and in order that they may make a seed time of their opportunities, Providence has, for a season, placed them,

In another column will be found a case now before Lord Chief Justice DENMAN, in the Court of Queen's Bench, respecting the validity of tin bounds, and the rights of "bounders" to a per centage on all tin raised within such bounds by other parties who may work the mine. The case is a long agitated one, and, on its last hearing, a verdict was recorded for the plaintiff, when the defendant moved for a new trial, on the ground of there not having been sufficient evidence to prove the custom; and, as the subject is a most important one, we shall, doubtless, interest many readers by a short review of the origin and nature of tin bounds, which inquiry closely bears upon the trial in question. Although the Norman earls derived immense wealth from the Cornish tin mines, the earliest charter respecting the Stannaries, is the 3d JOHN, A.D. 1202, which is preserved in the Tower of London, among the records of the Court of Chancery; in that charter power is given to "all our tinners in Cornwall and Devon, that they may at all times freely and quietly, without the disturbance of any man, dig tin, and turves to melt their tin, anywhere in the moors, and in the fees of bishops, abbots, earls, &c., *as they have used, and been accustomed*;" the latter sentence recognising an existing custom, which must have originated before the commencement of legal memory. This charter exempts "tinners" from the jurisdiction of any officer, except the *custos* or Lord Warden, and his bailiffs, and empowers them to direct watercourses to enable them to carry on their mining operations. The 33d EDWARD I., confirms all these ancient rights and privileges, and establishes the fact of an existence by custom at that remote period, of a right to search for tin in the demesnes of the Earls of Cornwall, as well as in the lands of individuals; Acts of 3d JOHN, and 33d EDWARD I., are confirmed by subsequent charters. We come now to an important document, the "Grant of Pardon," as it is termed, of HENRY VII.; Prince ARTHUR, his eldest son, made certain constitutions relating to the Stannaries, which the tinners refused to observe, and taking liberties not recognised in their charters, the KING, who lost no opportunity of filling his coffers, made this a pretence, after ARTHUR'S death, to take the whole workings into his own hands; but, finding it not so profitable as was expected, accepted a compromise of 1000*l.* for the pretended forfeitures, granting them his charter of pardon. This document purports to pardon about 1500 individuals, consisting of the nobility and other landowners of the county, with knights, esquires, and gentlemen, *otherwise tinners and bounders*, all transgressions, contempts, impeachments, concealments, fines, pains, imprisonments, debts, and losses, adjudged against the forms of any statutes, ordinances, restrictions, or proclamations "by us, or by our *progenitors before this time made*."

This charter establishes two important facts—viz., the legally acknowledged existence of tin bounds, and possession of such by a peer and others; the most influential names in the county proving that tin bounds were not originally, as has been contended, the exclusive property of the *stannator operans* (working tinner.)—It would be preposterous to suppose that, in its earliest operations, mining was without regulations, which would secure to the labourer the possession of what at great risk and perseverance he had obtained, and to prevent his discoveries of to-day from becoming the property of others to-morrow. To accomplish this, security was undoubtedly the object and basis of the bounding laws of Cornwall, and we will now describe a "tin bound," and of the mode of setting it out, or "cutting bounds," and the regulations to be observed in preserving and keeping the same as prescribed by the Stannary Laws. Having fixed on a waste plot of ground of reasonable dimensions, in which there is a prospect of finding tin, and which is preferred when near a stream of water, the bounder cuts out four corners in right angles to each other, and at each corner cuts out six turfs, and places them as hillocks, these mark the limits or boundaries of the enclo-

sure, within which he is to work; and, by the Stannary Laws, these hillocks are to be renewed every year, on the anniversary of the day on which they were first cut, which is called "renewing the bounds." A declaration, styled "a proclamation of bounds," is then drawn up, describing the situation of the bounds, the day on which they were cut, and if, as is most commonly the case, the proceeding be conducted by an agent, the latter states the names and descriptions of his employers, and that the spot then marked out was void of lawful bounds. By the last Act of Convocation (26th GEO. 2d, 1752), the bounder must give three months' notice to the lord of the soil of his intention to cut such bounds, in order that the latter may, if he think fit, cut and work such bounds himself: since which, bounds have been very rarely cut. The preceding remarks will convey an accurate idea of the nature of tin bounds, and the extent of proof which it is necessary for a plantiff to have at command, to secure him indemnification for any encroachment on the mineral beds which he has thus secured.

The out-of-doors fight for the Cornish railways is at length, we see, concluded; the further contest between them is adjourned to a different arena, and will, in all probability, be far more arduous, than that from which they have just put up, their weapons; the field of their future chivalry will afford a truer test, a more infallible touchstone of their knighthood—that is, of their merits as transit lines for the district they traverse—than any ordeal, popular or Parliamentary, to which they have ever yet been submitted. The whole of the trunk lines for this county appear to have deposited in good time their plans and sections at the office of the Board of Trade, and have so far opened to themselves the door of the Standing Orders committee room. It is difficult not to feel some measure of amazement at the cloud of lines which has passed the railway Rubicon; nor to fail of entertaining some apprehension that their *locus standi* beyond that river will, in many cases, be exceedingly insecure; as a whole, they cannot have gone to the encounter cautiously armed against its casualties, but have put on their mail so carelessly, as to leave some vital part of the figure uncovered, and accessible to the spear of a vigilant adversary; but, of all the unwarlike nakedness of which we have heard, that of the line, called, for distinctions' sake, the "Cornwall line," is, in its nudity, the most pitiable and the most complete. It is, as perhaps our readers are aware, a *remanet* of the last session; it had, shortly before that period, the ill fortune to receive the recommendation of the Board of Trade; with that damaging indorsement, it was carried to Parliament; and, on examination by a committee of the Lords, was found so insufferably bad in some of its leading features, that there was no conscientious alternative but its rejection. There is a class of minds to whom defeat yields no instruction, and condemnation no reproof; and the parties pledged to this measure, instead of abandoning it, which was the clear common sense course under the circumstances, and for the sake of the immense burden of errors under which the line laboured—instead of this rational course, the line has been vamped and re-modelled under that master in railway transmutations, Mr. BRUNEL, to the production of this huge folly, which has forced itself in upon the Board of Trade, preliminary to its irruption into Parliament. Sinking other questions, such as the false route it takes, its alienation from the true traffic artery of the county, its inability to more than half do the transit business of the district, and the strong objection felt against it by the large majority of Cornishmen, on account of its stretching away southerly to Plymouth and the sea, instead of hastening eastward to Exeter and the metropolis—we say, saving these serious objections, the line was thrust out of Parliament, and is resisted by the county, on the ground of its enormous engineering difficulties. They were appalling in the former line, and are not a whit less so in this. The plans and sections for the ground above Launceston are not, that we are aware of, published, but its properties up to that town settles the character of the line throughout; it accomplishes a course of tunnelling a perch or so short of three miles.

Seven long tunnels between Falmouth and Launceston says little for the constructional facility, or the travelling comfort of the line. The deep radii of the curves would give to fast travelling over the line a terrible oscillation; but, happily, it is incapable of high speed, as the sworn maximum velocity of the previous line, of which this is but a re-publication, was just *fifteen miles an hour*. The line will furnish its patrons with a large crop of railway difficulties; and the travellers over it with an accumulation of railway dangers, but as to railway dispatch, that is a flower for which, along the whole course of its crusty margin, there is neither soil nor shelter. Three miles of granite, or of greenstone, tunnelling, three miles of arched viaducts and bridges, and about fourteen miles of gradients, so steep and precipitous as 1 in 80, form a part, and a part only, of the heavy works upon this line. To these, however, must be added a more formidable defect than either of the preceding—namely, a gradient of 1 in 60 throughout twenty-eight miles of its course. It was on account of physical difficulties on the line, by no means heavier than these, that the scheme was before rejected by Parliament, and we cannot see what hope there is of a different result in tendering a line of the same, or of worse, engineering elements. The North Devon line, with which the north-eastern extremity of the Cornwall line was to incorporate, has fallen through till the session of 1847, not having yet deposited its sections, so that all possibility of getting eastward out of Cornwall, by these lines, is postponed for years to come. Crippled thus in its ascending course, and exemplifying throughout its whole journey, not the double blessing, but the double burthen, of Issachar—an ass crouching beneath two loads—and looking also to the power of the Devon and Cornwall Company, of immediately completing their line to Exeter; regarding, also, the unbroken continuity of that line, and the dislocation and appalling engineering elements of this, we should consider the rational and obvious course was its abandonment. A slight reference to the map will show that, by position, it is impossible this line can ever do the general transit business of the county. We know, also, that the Cornish public, in county meeting assembled, and presided over by the High Sheriff and the Lord Lieutenant, have unanimously condemned this line; its strength, in fact, is in the Great Western Company, who have subscribed a quarter of its capital, and in the high respectability of some of its promoters; but these away, the line is barely worth the paper it is laid out upon. The reason that so difficult and so ill-directed a line has obtained such patronage, is far from being an enigma.

The Great Western Company have nearly completed their South Devon line to Plymouth, and it would greatly enhance its value if the traffic of Cornwall could be brought to that terminus. A strong effort to bring it there is inclosed in this laborious struggle to procure a trunk line, whose higher extremity shall rest on Plymouth—a southerly and a coast point—instead of Exeter, a central and an easterly station, and on the great highway to the metropolis. If they succeed in carrying this line, they will secure to their South Devon branch the whole, *ab extra*, traffic of the county; this is the actual object, and real foundation of the line; as to its being in any sense the true transit route of the county, there is no man, even in the pay of the Great Western incorporation, wild enough either to believe or to affirm it. We have been led into greater length than we intended by these observations; but Cornwall is pre-eminently and emphatically a mining district. Our Journal is principally dedicated to mining interests, and we must needs experience a lively satisfaction at whatever promotes their growth and improvement. We have given the subject the utmost examination, and made the fullest inquiry within our power, and the result is a conviction—that to adopt the Plymouth line to the exclusion of the central projects, would be to administer a permanent discouragement to the reviving industry of the district. That a county fringed with a sea-bord of 260 miles, enriched with some of the first-class harbours, and inclosing a mining area second to none in its steady advancing productiveness, should be separated from the great market districts of the kingdom by the most expensive, the most dilatory, and the most indirect railway route that could be devised, is a proceeding to which we believe Parliament will never give its sanction, and which, if sanctioned, would result in the irreparable injury of those most nearly interested.

Much discussion has taken place on the subject of the responsibility of applicants for shares in railways, and the power possessed by the managing committees, to compel payment of the deposits; and although much misapprehension appears to exist upon the subject, we cannot but think the question much more free from legal quibbles than documents of this description usually are. By the Act 7 and 8 VICTORIA, c. 110, clause 9 provides for the deposit of copies of documents, plans, sections, &c., of works which cannot be constructed without the aid of Parliament (and in which the word "Railway" is conspicuous), and empowers the registrar to grant certificates of complete registration, on receiving certificate that the orders of both Houses have been complied with. Hence the question arises, what is complete registration? and by turning to clauses 25 and 26, the powers and privileges of registered companies are duly set forth; by these clauses power is given to sue and be sued, and to legally sell and transfer shares, and no shareholder can be entitled to the powers or privileges thereby granted, until he shall have executed the deed of settlement, or some deed, and shall have been registered and paid up all instalments and calls, and registered in the office aforesaid. Hence it appears that these powers are acquired, whether the company obtain their railway bill or not, and many of the new companies being, doubtless, by this time completely registered, are entitled to act in every capacity precisely the same as if they had obtained their Act, with the exception of not being able to commence the construction of the line, by purchasing the land, &c. We think these claims, if referred to, will prove conclusive evidence on the point.

As we have before remarked, in the columns of our Journal, the greatest jealousy exists on the part of our Gallic friends at the development making in the iron trade of this country, which has been represented by some of the foreign journals, and even our own, to be likely soon to be exhausted, in consequence of the rapid progress and demands making for railways, shipbuilding, galvanised iron, and other iron materials. England is pre-eminent, and nearly inexhaustible in iron ores, and that France, Belgium, and Germany, are well convinced of, by our annual return of metal produced in Wales, Staffordshire, and the northern counties, and Scotland, which meets with a ready sale on the continent in preference to any other, in consequence of its excellent quality, if it can possibly be obtained at an intermediate price. France cannot produce a sufficient quantity of iron for her own consumption, which has, within the last few years, more than trebled what it was twenty years ago, but particularly within the last few years, since the introduction of railways and steam navigation, and which demands are likely to increase to a very great extent, so that she must have recourse ultimately either to England or Belgium, if the Government is determined to have all the new railways that have been adjudicated or conceded by the Chambers during the last session, and those that will be granted during the ensuing one, by the Deputies and the Minister of Public Works, carried into effect. We alluded, a few weeks ago, to the virulent attacks of the Paris press against the Government, for having entered into extensive coal contracts for the furnishing of English coal for the use of the steam-packets running from Marseilles, down the Mediterranean to Egypt, Constantinople, and Algeria, as being superior to what the French can produce for that purpose, and at a less expense. There is, no doubt, plenty of coal to be obtained in France, but the question is this—Can her mines, worked as they are, produce a sufficient quantity to meet the demands required by Government and private enterprise? Certainly not; she must come to England or Belgium for her supplies—*malgrè elle*. We should not have made the above remarks, were it not for the continual *cerberus* articles that are appearing in the Paris papers against the great ascendancy that the coal trade of this country has taken, in the exportation of this necessary article of fuel from Newcastle, Durham, and other parts of the United Kingdom, since the absurd export duty of 4s. per ton has been repealed by Sir ROBERT PEEL, who had most injudiciously imposed it, has been the means of re-opening an extensive traffic for our coal industry to the continent of Europe, and even the south-western part of America, which, there is little doubt, will be annually increasing.

La Flotte, a journal in the interest of his Royal Highness the PRINCE DE JOINVILLE (of pamphleteering celebrity against the British navy, and her prosperous commercial and mining enterprise), pretends that Admiral MACKAU has issued an order, that in future in all the contracts that shall be entered into for the supplying of the marine department with coals, there shall be an expressed clause, obliging the contractors to import their cargoes in French bottom vessels, and under the colours of France exclusively. France, according to official returns, imports from England annually 350,000 tons of coal, of the average value of 4,000,000 fr., or 160,000*l*. sterling, which requires 2600 vessels to convey it. In 1842, the number of French vessels employed in this trade was only 675, bearing 54,884 tons, whilst those under the British flag, in the same year, were 3160 ships, averaging 312,282 tons. The importation of coal from this country is greatly on the increase from pure necessity (not from friendship), which has created an ambitious rivalry on the part of the coal mining interest throughout France; and, notwithstanding the amalgamation of the most influential companies of La Loire and other mineral districts, they find that it is impossible for them to produce a sufficient quantity of this requisite fuel from their own mines, to meet the increasing demands of railways, steam navigation, furnaces, foundries, forges, cotton, woollen, silk, and other manufactories, now worked generally by steam machinery. According to our esteemed contemporary, M. DILLON, who has been appointed French Consul at Newcastle, has given the Government to understand that it would be no infringement of the stipulations of the treaty of the 26th January, 1826, to confine the importation of British coal into the various ports of France, to French vessels only, and that the number of ships in the coal trade that would be required within his consular jurisdiction of Newcastle alone, would be annually from 1000 and upwards, averaging above 200,000 tons. The Government and M. LACAVE LAPLAGNE, Director-General of the Post-Office and Steam-Packets, are, however, of a different opinion, as they feel convinced that the mercantile shipping interest of France is in that state of inferiority, that they could not depend upon their supplies, should such a monopoly be sanctioned. According to the official returns for 1844, of the foreign commerce of France during the last six years, it appears that the merchant service has decreased from 1839 by 2000 vessels, averaging 168,000 tons, whilst the arrivals of foreign vessels in the differents ports, have increased in a rapid proportion—as, from 1839 to 1844 they have been 13,300 vessels, of 1,445,000 tons, more than previous to that period, so that the French shipping has decreased, on an average, since 1837 to 1845, by one-ninth in number, and at least by one-sixth in tonnage, and they have not a single commercial steamer that runs across the wide Atlantic, either from Havre, Bordeaux, or any other port, to the United States, whilst in this country we have a regular line of splendid steamers of large tonnage, that run from Bristol and Liverpool to and from New York, twice or thrice a month, affording the greatest facilities to our manufacturing interest, and more closely cementing the union that ought to exist between the two greatest commercial nations of the old and new world. The progress of the importations into France on board of British vessels has increased in proportion as theirs has decreased, so that the coal and iron trade of this country have very little to fear from their naval competition, in exporting either the one or the other from the United States, so strongly recommended by the French journals, to depreciate the commercial industry and prosperity of Great Britain.

[FROM A CORRESPONDENT.]

We learn with regret that a system very prejudicial to the mining interest, has been adopted by pursers and agents of several new mines lately taken up in the eastern district of Cornwall, and the western part of Devon. In consequence of the extraordinary discovery effected at Wheal Maria, a number of setts have been introduced into the London market, and brought out at a premium. The shares have been sold at a fixed price, through the agency of some London brokers, with a perfect understanding that none will be sold below; but as soon as the transfers have been registered by the pursers, and notice of the same given to the purchasers, the pursers, taking advantage of their official situation, in too many instances, offer shares to such persons (who are wholly unknown to them) under the price which had been originally stipulated; by which means a distrustful feeling is entertained by principals towards the brokers (their personal friends), and a want of confidence in the mine. Pursers are paid agents of the mine, and through whose instrumentality the sett is, in many instances, doubtless, obtained; and as they procure a premium, should assuredly be content with that profit, and their situation. A clause, in our opinion, should be inserted in the deed, or regulations, of the mine, that every purser, or paid agent of the mine, should be bound to work every share he originally took up, as long as he remained a paid servant—leaving to his option or capability the number of shares he could reasonably carry on. Such persons jobbing in shares produce a very serious and evil tendency to legitimate and honourable mining. They have the means of possessing the most intimate and immediate knowledge of any and every alteration. In case of improvement, they can conceal and withhold information from being conveyed to distant shareholders, until they purchase all they can procure; and on any unfavourable change which may take place, every channel for selling may be invaded, without the least possibility of purchasers knowing the cause, or real state of the mine, in time to discover the deception practised. We could name several parties, who have been represented to us as pursuing this system with great adroitness; and if the practice be not discontinued, we shall consider it our duty, in protecting distant shareholders, to furnish the names of the pursers, as well as the mines. We condemn the system, as unfair and most disreputable.

The enormous amount of official business connected with Parliamentary duties, which the immense number of applications for railway bills must create, renders it highly desirable that before the ensuing session commence, some plan should be adopted, by which the business could be satisfactorily and expeditiously arranged—one great step towards effecting this object would be the mode of choosing committees, and appointing the localities where they should examine the necessary evidence before giving their decision. For instance, instead of a committee consisting of five members of the House of Commons, it might be advantageously composed of, say, two active Members of Parliament, two respectable impartial men of general mercantile knowledge, and one barrister; and, instead of the whole of the committees being confined to sit at Westminster, we should recommend that two should sit in Dublin for the convenience of the Irish companies; two in Edinburgh, for the Scotch; and those for the English and Welsh lines in Westminster. By some such arrangement as this, the valuable time of the Legislature would be greatly economised, the hurry and confusion which marked the last sessions avoided, and the convenience and interest of all parties insured.

The progress that is making in mining operations, not only in the United Kingdom of Great Britain, France, Belgium, Germany, and even Russia, but in Spain and South America, proves that a new stimulus has been given to the working of what is one of the richest resources of a country. England stands pre-eminent as a mineral kingdom. The working of her vast coal beds of Staffordshire, Newcastle, Durham, Northumberland, Sunderland, Wales, and Scotland—her rich copper and tin mines of Cornwall, and Wales—the iron, lead, and other ores, with which she abounds—have opened a wide field for speculation and industry; and rendered her one of the most flourishing mining countries of Europe, if not the globe. The introduction of railways, steam navigation, and iron ship-building, have caused a most extensive demand for iron; and each country of northern Europe is now trying, not only to improve the quality of this valuable metal, but to supply the unprecedented demand that exists for it. France has always been attempting to rival with this country, whether in a commercial, manufacturing, or mining point of view, which has been the means of giving a stimulative antagonism to compete with the enterprising industry of this country. Half a century ago, mining operations in France were looked upon as only a secondary resource of the country, and even below that; but, during the last twenty years, mining has developed itself on a very extended scale—not only by the working of the extensive coal beds of the Loire, and other departments, but particularly the iron ores.

We have commenced, in another part of our journal, an abstract of the statistical works of the French Administration of Mines for 1844, which will be continued, as it is a very important document, and will be interesting to the mining community generally.

We noticed in the Journal of the 22d ult. the case of WILLIAM BRAMSTONE, master of the *Countess of Malmsbury*, who was summoned before Mr. BALLANTINE, for breaking bulk of a cargo of WYLAM's patent fuel, without paying the Corporation dues of 1s. 1d. per ton, to which coal is subject. The case is of considerable importance, as other cases will be, in a great measure, governed by it. Mr. PEARSON supported the summons; and Mr. PEN, of Bucklersbury, and Mr. BALLANTINE, jun., the barrister, appeared for the defendant. On the previous hearing, Mr. BALLANTINE (the magistrate) appeared to consider the substance must come under the denomination of coal, and had postponed his decision, to give time for consideration of the subject. Mr. BALLANTINE, for the defendant, said, he had Dr. MARSH and Dr. URE to prove that the coal had entirely changed its character by the process it had undergone, having lost one of its constituent parts—sulphur; and the magistrate said he had given the subject his most serious consideration—the words of the Act were coal, coke, and cinders; now these were all from the same substance, and yet each was specified; nor could he consider the present substance coals, within the meaning of the Act of Parliament, which was coal as raised at the pits' mouth; this manufactured article was not contemplated at the time of the passing of the Act, and he could not inflict a penalty on the defendant. Mr. PEARSON then informed Mr. BALLANTINE, that he wished the other pending summonses to be tried by his brother magistrate, to which he willingly assented, and on the present decision of the magistrate, Mr. PEARSON gave notice of appeal. The question is of too great importance to be decided before the magistrates, and will be eventually settled in a court of law.

IMPROVEMENTS IN THE VOLTAIC LIGHT FOR MINES.

In the *Mining Journal* of the 8th ult. we gave some description of the results arrived at by M. De la Rive on the voltaic light; in the prosecution of his experiments, however, he has met with only partial success, and there are still many difficulties to contend with. Mr. Grove, the professor of experimental philosophy in the London Institution, has long paid particular attention to the subject, and, soon after the publication of his nitric acid battery, he was struck by the facility and constancy with which the voltaic are could be obtained by that combination as compared with any previous one, and made many attempts to reduce it to practical form for the purposes of illumination, with, however, only limited success; charcoal, as in M. De la Rive's experiments, formed the terminals of the voltaic pile. Sometimes he could keep a constant light for four or five hours, but it was never sure; from some unseen defect in the charcoal, it would become suddenly extinct, the glass also became dull from carbon vapour which settled upon it: it was costly and not sufficiently portable. There were difficulties which he could not overcome, and he proceeded to experimentalise on another method which struck him as likely to be more applicable to lighting mines; he substituted the voltaic ignition of a platinum wire for the disruptive discharge in place of the charcoal arrangement. The light from the platinum is, doubtless, inferior to the carbon, yet it is too intense for the naked eye to support, and amply sufficient for the miner to work by. His plan was to ignite a coil of platinum wire as near the point of fusion as practicable, in a close vessel of atmospheric air or other gas, and, by the light of which, he states he has experimented and read for hours, and the apparatus he used was as follows:—

At each end of a coil of platinum wire is affixed a copper wire of convenient length, the lower ends of which are to be well varnished, and inserted either through the bottom of a glass vessel, or bent up along its sides, and connected to each end of a nitric acid battery; water is then poured into the vessel, and another glass inverted over the coil and its supports which the water thus hermetically seals, and the ignited wire now gives a steady light without any alteration or inconvenience, as long as the battery continues constant—the length of time, being of course dependent on the quantity of electrolyte in the battery cells. The spirals of the coil should approximate as near as possible, as each aids by its heat that of its neighbour, and it should be as long as the battery is capable of igniting to a full incandescence. The helix form offers the advantages that the cooling effect being lessened, a much longer wire can be ignited by the same battery; by this increased length of wire the battery fuel is economised, while a greater light is afforded; by the increased heat the resistance is still further increased, and the consumption still further diminished, so that, contrary to the usual result, the increment of consumption decreases with the exaltation of effect produced. The very necessity of inclosing the coil in a glass recipient also augments the heat, the light, and the resistance. In experiments on the effect of different gases on radiant heat, he found, by filling the vessel with hydrogen, the coil was not even visible in the dark; an increase of volume by expansion took place from 35 to 43; in carbonic acid, cherry-red by daylight, increased from 35 to 43; in oxygen, incandescent by daylight, 35 to 45; nitrogen the same; and atmospheric air the same as in oxygen. These appear important and satisfactory results, but actual practice on a larger scale can alone test their efficacy.

PATENT METALLIC BROACH FOR CASKS.

Mr. Depledge, of the Thorncliffe Iron Works, has secured a patent for a broach for casks, by which means the many disadvantages attending the hammering in and out the common tap are avoided, the cask kept perfectly air tight, and an entire saving in corks is the result. The following are the advantages which the patentee claims for his invention, over the common method of tapping:—First, The instrument will facilitate the broaching or tapping of casks, containing any description of fluid, with ease and safety; so much so, that a child might insert the tap even in the dark, without danger—so simple is its construction. Secondly, It will dispense with corks, which, to brewers, wine-coopers, &c., form an extensive item in extensive establishments. Thirdly, The tap cannot be removed by any means, from the cask, without leaving the orifice closed, and perfectly air tight, which to brewers is of great importance, since the cask must return sweet to the brewery, and, after simply rinsing with water, be fit for the reception of fresh liquor. Fourthly, The hammering in of taps, and the knocking them out again, is dispensed with, which will effect a great saving in cooperage to extensive establishments, where many casks are constantly in circulation: some, even with the greatest care of driving in and extracting taps, will speedily become too large in the orifice for their reception—to remedy which, the cooper has to put new ends into the casks, in order to make new tap holes.

Mr. Depledge states, that the cost of a metallic broach will scarcely exceed one twelvemonth's consumption of corks, and save considerable expense in cleansing the casks. We shall, in a future number, give a description of this invention—the patent not having yet been sufficiently matured to allow us to enter into the particulars of its form and principle.

We beg to direct attention to the advertisement of the sale of the Helen Iron-Works which appears in our advertising columns. They present a favourable opportunity to the capitalist desirous of embarking in the iron trade, as the works have been erected regardless of expense, are quite new, are in perfect working order, and, being situate in the vicinity of numerous railways about to be constructed, a vast amount of work might almost at once be contracted for. We understand that 5500*l.* is the sum asked for the works and machinery, and 2500*l.* for the patterns, boxes, and implements, being far below their value.

PRODUCE OF SPANISH MINES.—The mines in the districts of Granada, Sierra, Almagrera, Murcia, Almeria, Valencia, and Alicante, produced 15,172 marks 2 oz. of refined silver in the month of October.—[The mark containing 8 oz.]

THE IRON TRADE OF THE UNITED STATES.—Notwithstanding that the consumption of iron has increased very much of late years in the United States, the importations for the last ten years are far from having followed the same ratio in proportion, as the importation, which was in 1835 96,220 tons, was only last year 105,277 tons—a very insignificant increase compared with that of the demand. But, on the other hand, the production of iron in the United States has increased in a most extraordinary proportion, as in the state of Pennsylvania alone, the production of iron, which was 200,000 tons in 1844, had increased this year, up to the last returns received, from 330,000 to 400,000 tons. The total consumption of iron this year is estimated at 800,000 tons, 700,000 tons of which will be supplied by the furnaces of the country, and to the amount of about 100,000 tons for exportation. The Americans are working to a very great extent their iron mines, so as to compete, if possible, with Great Britain in the respective markets of Europe.

WALKER'S PATENT CYLINDRICAL COAL RIDDLE.—This invention of Mr. Walker, colliery viewer, of Gerard-bridge, St. Helen's, we noticed in a former number of the *Mining Journal*; and, as the advantages of the machine are now becoming appreciated, we take the opportunity of making a few more observations thereon. The patent riddle is cylindrical, constructed of five wrought iron angle hoops, within which are rivetted longitudinally, and parallel to each other, bars of wrought iron, of proper size and shape, alternate spaces of the size required being left between the bars. Two of the hoops are turned perfectly true upon their faces, and rest on four friction rollers,—which, being set in motion by the steam-engine, gives to the riddle the necessary rotary motion; or, it may be worked by spur pinion gearing. The riddle is fitted up on the pit brow, and so arranged, that one waggon on the tram road is brought beneath it, to catch the slack as it falls; and another in advance, on another line of railway, to shoot the coal into when screened. The necessary railway, from the pit's mouth to the riddle, with the manner of feeding it, may be easily understood by our readers. By the ordinary mode of separating, by hand-riddles, the slack and earthy matter from coals at the pit's mouth, considerable expense is incurred, not only in wages, but in cost of riddles, spades, barrows, &c. In addition to this, the proprietor is sure to receive all the coal and slack the operatives excavate; for it is a well known fact, that as the men are not paid so much for slack as for large coal, they allow the former to accumulate in the workings. This may be reckoned at fifteen per cent. on the amount of coal worked, besides keeping the workings clear, and less liable to accidents. A further advantage is, that while, by hand-riddling, there is always a great portion of dust left in the coal, the patent method causes a perfect separation, rendering the large coal more valuable. The patent riddle has, in fact, fully answered all the expectations of its inventor—is now coming into extensive use at the collieries in Lancashire—and will eventually be general in all our coal districts.

MANUFACTURE OF IRON IN INDIA—RAILWAYS IN THE EAST.

[FROM A CORRESPONDENT.]

That the circumstances previously alluded to should have retarded, beyond the expectations of the adventurers, the perfect realisation of their object, will excite little surprise; nor, on the other hand, that all obstacles should (as is the case) eventually yield to accumulated experience, and indomitable perseverance. The Madras Association are now prepared to execute orders, not only for castings of all kinds, and pig-iron as heretofore, but also for bar-iron, which, made entirely by charcoal, will be found of excellent quality, and adapted both for steel and iron purposes. The advantages of an iron manufacture in India have been duly appreciated by the East Indian Company; and the Madras Government, to encourage so useful an enterprise, has conceded to the association, on nominal terms, the exclusive rights of raising ore, and cutting fuel on Government lands. The demands for the produce of the works by Government and engineers, and by native and European establishments engaged in the manufacture of sugar, and the development of the other resources of India, are likely to be very great—being, in the actual state of the iron trade, at least, best supplied from thence; while the numerous projects in contemplation for facilitating communication with the interior, by means of railways and steam navigation, and thus extending our commerce, entitle the undertaking to be ranked among one of the most useful of the day; and, as the full occupation of the iron-works of this country, in the supply of home consumption and nearer markets, will, presumably, preclude competition from this quarter, the association may, in due time, so enlarge itself, by increased capital, as to establish the concern on a basis commensurate with existing prospects.

MINING IN WALES.

We have, on many occasions in former Numbers, directed attention to the vast mineral resources of the principality, and the safe and profitable means of investment they present, and we are glad to find that the attention of capitalists is now beginning to be more particularly directed to this national field of enterprise and promising speculation. In another column will be found the prospectus of a company now forming for working the Nant-a'r-Nelle Silver-Lead Mines, which are situated in the parish of Celycwm, in Carmarthenshire. There are six veins already discovered in the sett, which is on a mountain district, rising to 1000 feet above the river, and, from the assays which have been made, it is found that the ore will produce from 65 to 69 per cent. of lead, and from 18 to 19 oz. of silver to the ton of ore. The three principal veins run parallel with the range of the hills, and there are three caunter veins richly spotted with ore visible at the surface; it is, therefore proposed to drive an adit on the course of one of these veins, which will intersect the whole of them at their junctions, and carry off the water without machinery, thus enabling the full resources of the mine to be completely developed at a very moderate cost. It is capable of demonstration that these veins were productive as much as 400 years since, and it is probable they were known to, and worked by, the Romans. The indications are of a very promising description, and, as several tons of silver-lead ore have been raised by the lord of the manor in a most unscientific manner near the top of the mountain, and sold at from 12*l.* to 15*l.* per ton, it is highly probable that, as the proposed adit will cut the lodes at upwards of 100 fathoms in depth, a highly productive mine will be the result. The capital named for prosecuting the undertaking is only 5000*l.* (deposit 2*l.* per share), and it is probable this may not all be required to be paid up. We doubt not, therefore, the comparatively few mining operations hitherto carried on, but wherein such large deposits of ore have been discovered, and which have been eminently successful, will be much increased from the facilities afforded by railway communication; impressed with this opinion, we recommend a careful perusal of the prospectus, which we believe to present a simple statement of facts without the high colouring too often adopted.

BOLANOS MINING COMPANY.

A digest of the official advices and accounts for six months, ending the 30th Sept., 1844, gives the following results—viz.:

The hacienda profits, *wholly* the company's, amount to				$ 19,046 3 7
Produce of the mines for the six months				86,446 1 1—$105,492 5 0
Expended in works of research—				
Malanoche	$ 5683	6	7	
Veta Bella	4675	3	4	
San Rafael, Francisco de Paula	16177	5	7	
Loreto	399	1	4	
Santa Barbara	2724	1	3	
La Celestina	6714	7	6	
Sundries	19	6	4—36,395	1 3
Of the remainder ($50,050 7 6) 5-12ths belong to the mine owners, or				20,854 4 5
And 7-12ths to the company, equal				$ 29,196 3 1
Company's hacienda profit, as above			19,046	3 7—48,242 7 0—$105,492 5 0

—Thus showing a net profit on the six months' working, and ending the 30th September, 1845, of $48,242 7, or 9654*l.*

THE STANDARD OF TRIBUTERS' ORE.

Presuming that the method of ascertaining the standard of tributers' ore may not be uninteresting to our readers, we furnish a few examples for their information. It should be observed, that, when the private, or tributer's, produce is under the public produce, 2 per cent. is *added* to the public standard, and, *vice versâ*, when the private is above the public, 2 per cent is *deducted*. Supposing, therefore, that we take the public produce at 8¼, and the standard at 107*l.* 14*s.*—

No. of parcel.	Prod. of parcel.	Public Produce.		Public Standard.	Sandard.	Val. of parcel per ton.
		8¼		£107 14 0		
1	7¼	7¼	diff. added	2 5 0	£109 19 0	£7 16 8
	Diff.	1¼		£109 19 0		
2	9¼	9¼		107 14 0		
		8¼	deduct	1 15 0	105 19 0	9 13 4
		¼		£105 19 0		
		8¼		107 14 0		
3	6	6	add	4 10 0	112 4 0	6 14 8
		2¼		£112 4 0		

THE IRON TRADE IN FRANCE.—At the last market of St. Dizier there were some very extensive sales entered into of white metal cast in the previous week at different prices. 500,000 kil. cast metal of the Marne, 8*l.*; 800,000 kil. cast metal of La Blaise, 7*l.* 5*s.*; 500,000 kil. do., 7*l.* 15*s.* The demand for hammered or wrought-iron made by coal have become less in demand since the forgemasters have announced their intention of raising the price to 16*l.* for Paris, and 16*l.* 10*s.* for the provinces. These prices having been accepted by several dealers, it is expected that business will resume its usual activity, as the rise and fall in iron always produce an interruption of some weeks. Moulded metals are also on the rise—iron pipes are selling at 10*l.*; plates or sheet iron, 8*l.* 16*s.* to 9*l.* At the fair of St. Martin, at Besançon, the sale of iron was, as is generally the case, one of the most extensive during the whole year. The forgemasters were enabled to conclude their transactions with the greatest facility, and there was a rise of 20 francs, or 16*s.* on first quality of cast metal. At the last fair they were quoted at 9*l.* 12*s.*, and at the present one, 10*l.* 10*s.* There is a general rise in every description of iron throughout France, and likely to be greater. At Bordeaux, the metal market is at the present moment in a very reduced state, but there is no doubt that, if there was a better supply, some good transactions might be entered into. Old copper has been sold at 8*l.* 12*s.* to 8*l.* 15*s.*; red copper at 9*l.* 16*s.*; brass, 6*l.* to 6*l.* 10*s.*; copper for making boilers, 8*l.* 15*s.* to 9*l.*; zinc is nominal at 1*l.* 12*s.* There is no supply of Spanish lead which would obtain easily 1*l.* 4*s.* to 1*l.* 8*s.* At the last fair of Chalon-sur-Saone, the following prices were obtained:—Cast metal of Comté, 10*l.* 10*s.*; half rock metal of the Upper Marne, 8*l.*; rock do., 8*l.* 10*s.*; fine iron of Comte, 23*l.* 5*s.*; hammered or wrought-iron of Burgundy, 15*l.* 5*s.*; do. of Poissons, made by coal, 15*l.* 16*s.*; do. made by wood or charcoal, 17*l.* 5*s.*; flattened iron of the Marne, 14*l.* per ton. The above prices offer very good profit to the manufacturers, but there is very little doing. For cast metals there have been a great many purchasers, but few sellers, as this metal is rather scarce in the market. It was expected at the fair of Chalon that these quotations would be maintained for 1846, as very extensive orders have been given to be delivered early next year, and at high prices.

VALUE OF RAILWAY SHARES TO ORIGINAL HOLDERS, AND AT PRESENT PRICES.

The following table will give some idea of the value of railway property for investment, as compared with the funds and other undertakings; it will be seen that, although none of them pay 5 per cent., at present rates, to the fortunate original holders, the dividend varies from 3*l.* to 10*l.* p. ct.

Div. last half-year.	Railways.	Amount paid.	Per cent. on orig. price.	Present price.	Per cent. at present pr.
£1 16 0	Birmingham and Gloucester	£100	£3 13 0	£134	£2 18 1
0 3 0	Eastern Counties	14½	3 0 6	19½	1 10 9
5 0 0	Grand Junction	100	10 0 0	229	4 7 4
3 4 0	Great Western	80	8 0 0	149	4 5 8
5 0 0	London and Birmingham	100	10 0 0	214	4 13 6
1 0 0	„ and Brighton	50	4 0 0	61	3 5 7
1 17 0	„ and South-Western	38½	9 10 4	75	4 18 7
1 0 0	Manchester & Birmingham	40	5 0 0	72	2 15 5
2 18 0	„ and Leeds	76	7 12 7½	126	4 10 7
3 0 0	Midlands	100	6 0 0	142	4 4 0
2 10 0	Sheffield and Manchester	100	5 0 0	117	4 5 6
2 10 0	York and North Midland	50	5 0 0	105	4 15 3

RAILWAY LIABILITIES—IMPORTANT OPINION.

The great question, as to how far parties applying for shares in the lately projected lines of railway, have rendered themselves liable by the mere application, has now become of immense importance to all classes of society. With this feeling, and with a view to give every applicant for shares a knowledge of his true position, the proprietors of the *Sunday Times* have obtained the legal opinions of the Solicitor-General and Mr. Pitt Taylor on the subject. Three supposed railway companies are represented by A, B, C; a gentleman, named Z, writes to each, by filling up the usual form, requesting fifty shares,—agreeing to pay the deposit, and sign the necessary documents. From the secretary of A, he receives a letter, informing him that twenty-five shares have been allotted to him,—and that, unless the deposit of 2*l.* 2*s.* per share is paid, *on or before Wednesday, the 25th instant, such allotment will be void.* From B, he received a similar letter; but with this conclusion, *in default of which, this allotment will be cancelled, and the shares disposed of to other applicants*;—and the C secretary writes, that twenty-five shares are allotted, *on condition* that the deposit is paid on a certain day, &c. The questions put to counsel are—1. Have the provisional committees any (and what) remedy against Z; and must they sue in law, or in equity? If the letters of request are binding agreements, do they not constitute a partnership between the parties?—2. Under the wording of the several allotment letters, is it not competent for Z to make his election, whether he will cancel the offer or not; or does such option rest with the committee?—3. Would it not be good grounds of defence, that the names of responsible and influential parties have been placed on the committee, or that exaggerated statements have taken place between the parties, to induce them to subscribe for shares?—And, 4. Generally, to suggest any steps Z may take to save himself from the consequences of his having applied for, and refusal of, the shares in question?—The following is the opinion given:—

1. We are unable to say how far the prospectus issued by each company may affect the contract; but, if such prospectus be legal, and conformable to, and authorised by him, Z is bound by his agreement: it is a contract to become a partner to the extent of twenty-five shares. Many great practical and technical difficulties would, however, surround and impede any attempts to enforce the contract, either in law or equity; and we do not see how either could be ultimately successful.—2. The election, as to cancelling, or forfeiture, would be in the company, and not in Z, as he would not be allowed to take advantage of his own breach of the agreement.—3. It would be a good defence to any action, that the names of responsible parties had been used as directors or shareholders, when, in fact, they were unconnected with the project; exaggerated and untrue statements, if untrue to the knowledge of those who made them—if they were calculated to mislead, and if the purchaser had even only in part been induced by them to enter into the contract—they would amount to a fraud, and the contract be vitiated.—And 4. We advise Z *to remain quiescent*,—and if legal proceedings are instituted against him, *to defend himself*.

FITZROY KELLY. J. PITT TAYLOR.

LONDON SEWAGE COMPANY.—The pollution of the River Thames by the drainage of the metropolis has long been felt a nuisance, to get rid of which some stringent measures must be adopted at no very distant day. Already, with a population of 2,000,000 of inhabitants surrounding its banks, the contents of the gigantic sewers of London are carried backwards and forwards in the Thames with the tide; the heaviest portions subsiding, leave, at low water, the shores in a most filthy state; gases of the most deleterious character and injurious to health, are largely generated, and, as the extremities of the modern Babylon still extend, the nuisance daily must increase. The London Sewage Company is formed for the purpose of remedying this evil, and, by the adoption of the means they propose, will turn the contents of the sewers—at present valueless, and a pest to the inhabitants of this large and splendid city—into an article of commerce of considerable worth, freeing the population at the same time from a source of pestilence, the effects of which the majority of the people are little aware of. The plan proposed by the company is one of considerable magnitude, but by no means difficult of execution; it is proposed to intercept the whole of the sewage on both sides of the Thames, and to carry it underground without any objectionable exposure or nuisance to the country, to be sold to the market gardeners and agriculturists for manure. For such purposes it is well known that the chemical formation of the sewage of large towns, renders it a most important ingredient as a manure; what is now thrown away, will thus be converted into an element of national commerce, and the salubrity of the metropolis and the beauty of the river's bank be thereby greatly increased. The company's operations will also extend and improve the drainage of the metropolis; under the existing system of using the Thames as the only receptacle for the contents of the sewers, none can be constructed below the low water level of the river, and, consequently, in many parts of London there cannot at present be any efficient drainage. This evil the company will thoroughly remedy—for its plans will supply a channel for carrying off the sewage even from the lowest situations in London and its subsurbs, throughout which there will then be every inducement to make the drainage complete and effective, a desideratum that has long been wanting. They have secured the services of Mr. Wicksteed, the well-known engineer to several water companies, and Mr. Arthur Aikin, chemical lecturer at Guy's Hospital and vice-president of the London Chemical Society, is to be the consulting chemist; and, as the well-digested plans which the company are prepared to adopt have been patiently and thoroughly considered, it is hoped they will obtain the Act of Parliament for which they will be ready to apply in the ensuing sessions. The project is one which deserves the support of the community at large, and has received extensive and influential support. The capital is 1,500,000*l.*, in 37,000 shares, of 40*l.* each.

THE CHELTENHAM, OXFORD, AND LONDON JUNCTION RAILWAY.—The provisional committee of this company have so far completely overcome all the difficulties which present themselves in getting a railway project through Parliament; the plans, sections, and all the necessary documents, were lodged in the Parliamentary offices, and with the Clerks of the Peace within the due time. The committee adopted a very praiseworthy course—that of issuing no letters of allotment until after the 30th of November; and, such letters having now been issued, some remarks on the general prospects of the company may prove acceptable. With respect to the line itself, it will give to the town of Cheltenham those advantages of railway communication with all parts of the kingdom which its importance demands; commencing at the Birmingham and Gloucester station at Cheltenham, it will proceed, by Bampton and Abingdon, to Didcot and Maidenhead, and thus to London by the Great Western Railway. The line, almost straight, is void of all constructional difficulties, and will, when carried out, cause a saving of thirty-six miles in the whole distance of 122 miles between Cheltenham and London, and twenty-nine miles in the first portion of the line—viz., from Cheltenham to Didcot—and, as several existing and projected lines meet at Didcot, this latter saving is of considerable importance. This line may be considered an important trunk line as connecting by the shortest route the south and south-east coasts of England with the midland districts, South Wales, and Ireland; while the local benefits which it will confer have caused meetings to be held in the several towns of Bampton, Abingdon, and Farringdon, at which it was severally unanimously agreed to support the line and its branches; that petitions should be forwarded to both Houses of Parliament, and that the county and borough members be requested to support the same. The company is now placed in as favourable a position as any of those which have to pass the ordeal of Parliament; they have done all required by the Standing Orders; they are well supported in every locality through which the line will pass; and, not being opposed, they have every chance of obtaining their bill early in the ensuing session, and thus be enabled to break ground on the opening of spring.

WREXHAM.—The business of this town is now rapidly increasing in consequence of the various railways now in progress in the neighbourhood; and all the iron works in the neighbourhood are so busy, that two sets of men are now in full employment.

Original Correspondence.

THE PORTS OF THE ASTURIAS.

SIR,—I have much pleasure in handing you for insertion the following article on the French and English convention, which appears in the *Times* of the 10th instant. I do so in furtherance of a promise which I made to the public, through your Journal—that of calling attention to the relative advantages of Aviles, the ports of Gijon, and Rivadesella:—"France imports, on an average, 350,000 tons of British coal per annum, at a declared value of 4,000,000 fr., which requires no less than 2600 vessels. Now, the French flag only figures, in 1842, in that mass of transports, for 675 vessels, measuring 54,884 tons. The proportion of the British flag, in the same year, was 2160 vessels, and 313,282 tons. A correspondent worthy of credit informs us, that the coal trade in the harbours of the consular jurisdiction of Newcastle will occupy this year 1000 French vessels, measuring 200,000 tons, or nearly double the number employed previous to the decision of Baron Mackaw."

My motive for giving publicity to the foregoing, is the hope of keeping alive the question, and I doubt not those who are uninformed, or have been misled, may be induced to join me in the inquiry: at any rate, the extracted article from the *Times* newspaper, shows that a safe and commodious port is absolutely necessary in the Asturias—I mean if the promised annual export of 300,000 tons of coal is to be made, or anything like that quantity exported from the Asturias. In your paper of the 26th of April last, you said, and I think you wisely said, "mark, learn, and inwardly digest," but I fear that many a truly honourable man has not followed your advice; but, whether I am right or not, the inquiries into the relative advantages of Aviles, the ports of Gijon, and Rivadesella, will in some respects prove.—NOAH COWARD: *Infiesto, Asturias, Nov.* 27.

THE DIAMOND—IRELAND.

SIR,—You have already recorded the promise of a rich diamond harvest in the district of Bahia; and diamonds have been found in localities not included within those inter-tropical limits, we had formerly assigned, as lines of demarcation to their natural history, as among the Oural Mountains, in the vicinity of the French colony of Algeria, and elsewhere. A German author of some distinction has been pleased to quote me as an authority for this question, though I am afraid he overrates my ability. Be this as it may, there can be no doubt that the fences which were formerly supposed to circumscribe the local range of the diamond, must be broken down. I think there can be no doubt that the diamond has been found in Erin's green isle, and a lapse of very many years has not diminished the opinion I then expressed, that Ireland abounded in mineral wealth to a vast and inconceivable extent. But the incubus which has hitherto rested on that ill-fated country—"Like a weary cloud upon its breast"—has checked manly enterprise, and paralysed exertion—I fear *ignorance* is the bane. The people must be roused from their tortoise lethargy, for, like the abode of that creature, their hovels are *dust*. They must be taught to feel themselves *men*, and raised above the level of the lower creation. It is an Augean stable, and requires the labours of a Hercules. Pray, pardon the episode. I remember that, many years ago, Dr. James M'Donnel, of Belfast, showed me fine specimens of the beryl, hyacinth, topaz, &c., which had been discovered in Ireland, and it is known that masses of native gold, of considerable size, have been *frequently* found in the county of Wicklow.

I had the following detail from the Rev. Dr. Robinson, of Armagh, an astronomer of rare eminence, and distinguished in several branches of science:—A lady in Fermanagh was in the habit of collecting pebbles and fluviatile shells from the bed of the stream which flowed through the district, and the children, from time to time, brought her specimens, and received their penny fee. One day a little girl presented what purported to be a *peeble*, and received a *sixpence*, with a proviso for its return, should it prove of inferior worth. Some time after this, the lady asked the opinion of Mr. Mackay, an eminent jeweller of Dublin, who unhesitatingly pronounced it to be a DIAMOND, worth about 20*l.* in the rough; this opinion was subsequently confirmed by Mr. Rundle, of London. The lady had a notice posted on the parish church door, requesting the little girl's return, and she would hear of "something to her advantage," but she never reappeared. Dr. Robinson had the diamond for a short time in his possession. A beautiful piece of modern carving was some time ago in a jeweller's possession in Dublin; it was executed in Irish bog oak, representing the usual emblems of Ireland—the round towers, the Irish wolf dog (almost, if not now altogether, extinct), and Erin's harp suspended on the willow—that harp studded with the native jewellery of Ireland, and among them, if I am rightly informed, the *diamond* in question; the carving was inlaid with *native gold*. I regard the introduction of railroads, and a liberal, enlightened, and expanded system of education, as among the elements of a *novus ordo* in the history of Ireland. *Why* should Erin's harp hang upon the willow? An echo repeats—"*Why?*"

Portland-place, Hull, Dec. 6. ——— J. MURRAY.

LIGHT—DR. FARADAY.

SIR,—Brilliant as have been the discoveries of science in the nineteenth century, I consider the recent one of Dr. Faraday on light, to be, in more senses than one, the most *luminous* and *attractive*. Newton's prophetic vista seems, moreover, to realise a sublimer import, when he alludes to the phenomena of electricity. I am not so sure that it proves an *identity* common to light, electricity, magnetism, and caloric, but it certainly demonstrates a *principle* common to them all, and linking the whole by an indissoluble bond, though a viewless link of union. Dr. Faraday's researches have established a *family likeness*,—

"Nec tamen diversa,
Qualem decet esse sororem,"—

and thus supplies another link of evidence for the unity of purpose displayed in the plan of creation, while it illustrates Newton's sage remark —"Though every true step made in this philosophy, brings us not immediately to the author of all things, yet it leads us nearer, and is, on that account, to be highly esteemed." Dr. Faraday's success is a fine example of beautiful analogy and sterling instruction, and he well merits the reward of his patient research. When Sir James South announced, in the *Times*, Dr. Faraday's deflection of the polarised ray by the magnet, &c., a writer very foolishly endeavoured to filch the feather from his cap of renown, by preferring a claim for the discovery, which amounted first to this—an idea of the same kind had floated through his head, but he could realise neither time nor means to prove the fact by experiment!! True, there were strong analogies which might have prepared the mind for this great discovery—the whole phenomena of thermo-electricity and electro-magnetism—the communication of magnetism by frictional electricity—the *actinism* of the solar spectrum—and, above all, the discovery of Morrichini, as verified in this country, by Mrs. Somerville—viz., the communication of magnetism to steel needles by the violet ray of the spectrum. These were so many precursors, or *avant couriers*, to this great announcement, but do not, in any wise, disturb its merits, and I would now transfer the compliment I paid to Morrichini, when at Rome, in 1818, and he presented me with one of the needles so magnetised—"You have, indeed, thrown a new light upon light" to Dr. Faraday! J. MURRAY.

Portland-place, Hull, Dec. 6. ———

MR. JAMES RYAN.

SIR,—It is a fact worthy of memorial, that Mr. James Ryan has *never lost one man* in the various mines, of which he has had the supervision; and it is a circumstance equally deserving record, that mines formerly fiery, and characterised by constant explosion, were, by Mr. Ryan, *completely freed* of "fire damp," and these *explosions finally terminated*. These are facts, and to the ear of reason speak "trumpet tongued." "Coal viewers" and "pitmen," wedded to their preconceived notions or fancies, right or wrong, as a matter of course repudiate any and everything which disturbs their placid self-conceit; and they impugn, as "novelties" and "innovations," the introduction of any amelioration. Like the "craftsmen" of Ephesus, their warwhoop is—"away with these men from the earth"—"wedded to their idols, let them alone." I have lately received two letters from a person, who actually signs himself "Engineer!" and yet cannot write intelligibly—or, at least, cannot make himself understood to me; the only idea I can worm out of these confused epistles is, that he objects to Mr. James Ryan's plan, because he has a nostrum of his own. He ventures to say that Mr. Ryan cannot make himself intelligible. One thing I know, I defy any one to comprehend the drift of the two letters referred to, or attach a definite meaning to any one sentence. The other day a Mr. Maund, at Dudley, in addressing himself to me, said that Mr. Ryan's plan had been tried in a mine of which he had the charge, but that it did not *completely free* the mine of "fire damp," and yet the admission was made, that the explosions were subdued! As far as I can see, the only objection to Mr. James Ryan's plan is, that it does not *immediately* drain all mines of "fire damp," and meet every contingency, condition, and casualty. Let it be observed that *exceptions* establish the rule, and the rule remains intact. Singular and eccentric, or peculiar phenomena may arise, but this is nothing to the purpose. The questions are—1. Has Mr. Ryan's plan proved successful to a certain extent in *particular* mines? 2. Has it proved completely successful in any mine? 3. In those mines where it has been only *partially* successful, has the plan been fully and efficiently carried out? It is certainly the *only method* that I know of, which provides for the continuous escape of the "fire damp" founded on the immutable laws of its low specific gravity, and is, therefore, *pro tanto*, invaluable.—J. MURRAY: *Portland-place, Hull, Dec.* 9.

FIRE DAMP.

SIR,—Would you do me the favour to point out to me in what part of the *Mining Journal* I have called your sensitive and irritable correspondent "a fool," and, add to this kindness, by *interpreting* the following passage —"This error makes one of the greatest phenomena I ever knew, appear to practical miners as nothing out of the common way." "Oh! that mine enemy had written a book!"—so exclaimed the patriarch of old. So it appears the "fire damp comes out of the fissures." That its retention or issue depends on the rise and fall of the barometer, is a well-ascertained fact, and easily and naturally explained. The indications of the barometer are an important test, and regularly consulted by the enlightened miner —a sudden fall of the mercury, which is followed by a storm, is a dangerous presage in a fiery mine. I have, of course, nothing to do with the opinions of Messrs. Buckland, Ick, or any others—I am only responsible for my own sentiments.—J. MURRAY: *Portland-place, Hull, Dec.* 9.

DISEASED POTATOES.

SIR,—As you have introduced one or more paragraphs in allusion to the prevalent disease in potatoes, and as it is a question which touches every one, and is of universal interest, perhaps you will allow me to give you the results of my own experimental investigations. In brief, the disease is attributable to the parasitic attack of a cryptogamic fungus. On the continent it was ascribed, on its first announcement, to a *puccinia*. It has generally been called *uredo tuberorum*, just as we have *uredo segetum* and others; *fussisporium* is more descriptive of the character of what I examined. The predisposing or predetermining causes of the parasitic attack, I, in common with others, attribute to the combined *cold and wet of August*. An intelligent friend, James Cockburn, Esq., of Guernsey, who observed the attack in its incipient stage in the Island of Jersey, wrote me that it first seized the *stems* of the potatoe, which I cannot doubt is the fact of the case, and the *sporules* being absorbed, finally infested the tuber, and produced ultimate decay; of course, *equivocal production*, I repudiate as alike unphilosophical and absurd.

I do not think it is a new or unknown vegetable disease, but this season was especially favourable to the development of its most aggravated type or form. It seems to have been the same which destroyed the tuber of the *anemone* some years ago, and was assuredly that which rioted on a root of one of my plants, *delphinium barlowii*, in early spring, and completed its destruction. I found that a section of a diseased potatoe, after long repose in lime water, was reduced to a saponaceous mass. The fungus of another portion was unchanged after remaining many days in cold water; while a third piece, introduced into water at 212 deg., and allowed to continue for some time, deposited a copious sediment of *redish-brown matter*, proceeding from the disintegration of the *fussisporium*. Here an eye *germinated* though in contact with the fungus, and the diseased substance seemed slightly *alkaline*, as determined by turmeric paper; a few globules of gaseous matter were detached in the disintegration of the fungus. The application of tincture of iodine to the surface of a section of a diseased potatoe developed the pipe-like structure of the parasite, for the space within the ring and that without were changed to an indigo colour, while the ring remained unaltered.

That the fungus is poisonous both to man and beast, there seems to be the clearest evidence, and I fancied I myself felt its poisonous influence. Further, if the potatoes, though diseased, be cut into two or more pieces, and *boiled*, and the water changed three or four times, its poisonous properties are extracted. This, too, is a fact equally clear. And, though in a *wet* soil, the fungus soon completed the destruction of the potatoe, in remediless decay, and communicated, by contact, its baneful influence to others, yet I proved that *air and dryness*, arrested the progress of disease, and, if dusted with *quicklime*, the potatoe might be indefinitely preserved. It has been said that "*forty-fold*" *potatoes* have escaped the general scourge —certainly mine have, and I was the *first* to introduce that potatoe into Gallowayshire. In a letter I wrote to Sir Robert Peel, at an early period of this truly important and national question, and which the right hon. baronet did me the honour to acknowledge, I recommended, as the result of my researches, dusting the potatoes with *powdered quicklime and powdered charcoal*, &c., and the soundness of that recommendation has been repeatedly since verified, and conclusively confirmed. In planting the sets in spring, I think it extremely advisable to sprinkle *quicklime* on the drills and sets, before they are covered in—a practice I mean to adopt. With the exception of the starch making, I believe I have given you all that is really useful or practically available. J. MURRAY.

Portland-place, Hull, Dec. 9. ———

SCIENTIFIC PARADOX—IS CHLORINE A SIMPLE SUBSTANCE?

SIR,—Our common table salt (muriate of soda) is composed of soda (oxide of sodium) for the base, and muriatic acid. According to modern chemistry, this salt is a "*chloride* of sodium," and chlorine, we are told, is an elementary substance, but as the muriatic acid can be separated from the alkali, and the alkaline metal from the oxide, and as it thus, under this view, requires two distinct processes to produce "muriate of soda," "oxy-muriate of sodium," or "*chloride* of sodium"—in the name of all that is simple, how can chlorine be a simple elementary substance. I believe in all chemical works, even up to the time of the latest publications of Parkes, this compound acid is called oxy-muriatic acid, thus evidently a compound substance, and I should be greatly obliged to Dr. Murray, or any other of your chemical correspondents, to explan this, to me, apparent inconsistency.—CHEMICUS: *Highbury, Dec.* 4.

STEAM-BOILER EXPLOSIONS—BISHOPWEARMOUTH WORKS.

SIR,—I have just read an account in the *Mining Journal* of Saturday, the 29th ultimo, of the explosion of a steam-boiler at Bishopwearmouth Iron-Works, which recalls to my recollection some communications I addressed to you now some years since, perhaps four or five, upon the subject of such explosions, in connection with the decomposition of steam, or the vapour of water under various circumstances. I will endeavour to throw together, in a hasty way, some of the points referred to, as I consider it the duty of any one, who imagines he can make a useful suggestion, to avail himself of the opportunity which you so liberally afford, through the medium of the Journal. I have been myself long fully satisfied, that a decomposition of the vapour of water takes place in various ways, although I have been opposed by engineers and practical men generally; I leave them to cherish their own opinions, while I do mine. What is going on in the atmosphere during a thunder-storm? Can it be anything else than the re-union of the gases, oxygen and hydrogen, the elements of water, raised from the earth as vapour. This vapour, continued in the atmosphere for a length of time by the heat of the weather, separates into its elemental gases. I say nothing of the exciting cause of the re-union of the gases; I merely refer to the effects. A great bulk of gases unite with explosion, producing flame; the sudden condensation produces a partial vacuum, towards which the air rushes from all sides with great force and noise, and the water, so produced, falls as rain. I have noticed that steam from a high pressure engine is invisible in hot sultry summer weather, which usually precedes thunder, when there is no great body of water near; I have observed this more particularly in locomotive engines; when passing over ground, away from water, the steam would be invisible, but, coming to a broad river, or passing over wet marshy ground, the steam would then show itself. I was engaged about some large iron-works in South Wales, where, immediately previous to my going, two explosions of boilers had occurred. One of these was easily accounted for: when the workmen at the mill required the machinery to be stopped, they struck upon some sonorous part of it, when the engineman shut off the steam; before doing so, however, he usually took the precaution of opening his fire-door; but, on the occasion alluded to, the striking being more rapid and louder than usual, fearing some accident had occurred, the engineman shut off the steam, without such precaution, when the whole of the immense power required for the mill-work, was thrown back upon the boiler, while the entire production of steam was still going on, when the end of the boiler, a long Cornish tube boiler, was blown out. The other explosion took place when the engine was standing still during breakfast-time, everything about the boiler appearing to be in proper order, and it is under these very circumstances that by far the greatest number of fatal steam-boiler explosions have occurred. My opinion is, that when steam is kept at rest, shut up in a boiler for some time, say from half an hour to one hour, some gaseous action is taking place, tending to an explosion; and in the communications I sent some years since, to which I referred, I propose to allow steam to escape, whenever it is necessary to stop machinery worked by steam-power. When steam is abundant and fuel cheap, the safety-valve might be kept up all the time of stopping; but, if the steam is deficient, which is too often the case, and the indirect cause of many explosions, or fuel dear, then the valve might be lifted for a time, occasionally, say for one minute in every ten minutes. The existence of electrical action in steam has been determined; but, as my immediate object was to repeat the suggestions above-stated, of letting steam escape when not required, and a few of the considerations from which I drew my conclusions, I refrain from further speculation.—T. H. LEIGHTON: *Whitrigge, Dec.* 3.

NAVIGATING THE RIVER AMAZON, IN SOUTH AMERICA, BY STEAM—VALUABLE MINERAL DISCOVERIES.—We some time back stated that attempts were making by the Americans to run up the River Amazon by means of steamers; from further particulars we have received on the subject, it appears that four steam-boats were built in the United States for that purpose. When they arrived at Nuestra Senora de Loretto, a port on the limits of the Brazils and Peru, they there found the American, Captain Clause, who had come from Lima to take command of the expedition. Captain Clause, on board of the Peruvian steamer of 140-horse power, ascended the river as far as the mouth of the River Guallaga, and afterwards in a boat, accompanied by 350 Indians, which number he progressively increased to 700; he then ascended the Guallaga as far as the village of Tingo, situated in Peru, and seven days' travelling from Lima, when he was able to have the current of the river cleared of all obstacles which might impede the progress of the steam-boat. That accomplished, he returned to Loretto, and brought the steamer up the Guallaga to the said village of Tingo, from whence he despatched an express to Lima. The commercial house which is at the head of this enterprise, gave orders to Captain Clause to explore the River Gastoza, another branch of the Amazon, as far as it was navigable for steam-boats. He found this river perfectly navigable as far as the village of Andoca, situated on the limits of the republics of Peru and the Equator; from thence he went by land to Quito. In the course of this exploration, he discovered several mines of sal-gomma, and very extensive silver and platina mines. He was quite surprised at the mass of riches the countries he passed through contain, consisting chiefly in valuable mineral ores of various descriptions, timber for building and dying woods, coffee, cocoa, cotton, spices, balsams, resins, wax, and a great number of other produce of the highest importance.

THE WORKING OF MINERAL OR BITUMINOUS COMBUSTIBLE AND TURF, OR PEAT, IN FRANCE.—The number of anthracite mines and coal now worked in France is 261, and 143 are idle. The extent of the surface conceded, or granted, by Government authority is 1848 hectares. In these mines there are 742 pits, 962 galleries opening to the light; the maximum of the depth of the works is 503 metres (1509 feet). There are employed 396 steam-machines, and 118 grinding-machines, of the force of 10,189 horse power. The number of miners employed in and out of the mines is 29,528; their salary for the year is 651,717*l.*; the weight of coal extracted was 36,925,396 metrical quintals, of the value of 1,347,477*l.*; the total consumption of France is 52,935,082 metrical quintals, or 2,646,755 tons. In the working of turf there are 727 bogs worked, and 5151 not worked, employing 46,249 persons, the salaries of which during the year amounted to 88,410*l.*; the quantity of turf extracted was 4,609,082 cwts., producing 1,459,918*l.* In several departments throughout France, peat or turf fuel gives rise to very extensive works, such as sugar manufactories, distilleries, dye-houses, steam-boilers, lime and plaster-kilns, &c.; turf is also used in some of the forges, but the quantity consumed in the making of iron is rapidly diminishing, in consequence of the adoption of coal and wood which are now becoming very general in all the iron factories of France.

NEWCASTLE-UPON-TYNE, EDINBURGH, AND DIRECT GLASGOW JUNCTION RAILWAY.—This railway company, which we noticed in the *Mining Journal* of the 22d ult., we are glad to see is progressing most favourably; their plans, sections, and books of reference, have all been completed and deposited in accordance with the Standing Orders of Parliament, and, as none of the competing companies have succeeded in depositing the necessary documents, this company is the only one in a position to apply to Parliament in the ensuing session for powers to make a railway by the midland route, connecting Newcastle and the entire east coast of England, down to the metropolis, by the shortest line with Edinburgh, Glasgow, and all the leading towns of the border counties of Scotland. The 15th of the present month is the day to which applications for shares are limited. A number of influential landowners have signified their intention to support the interest of the company, expressing their confidence that the proposed line will be highly beneficial to the country through which it will pass. One of the greatest advantages of this undertaking will be the development of immense fields of iron and coal, which lie in the extensive district of country stretching from the line of the Newcastle and Carlisle Railway northward to the Scottish border; nearly the whole of which has been hitherto shut out from consumption by the want of an economic mode of conveyance to the large towns and sea ports. It is the fixed opinion of many eminent mineral surveyors, that nothing can prevent the iron trade of England settling in Northumberland to a great extent, as the ironstone is of the finest quality for making the best grey iron, and coals are at a cheaper rate than in any other part of the country. We are informed, on high authority, that iron of equal quality cannot be made in any other part of England at less than from 30 to 60 per cent. above the cost price of this district

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GREAT MANCHESTER, RUGBY, AND SOUTHAMPTON RAILWAY.—Among the projected companies, the managing committees of which were unable to get their plans, sections, &c., deposited in the Parliamentary offices within the prescribed time is the above—greatly to the regret of the managing committee, who appear to have done everything in their power to have furthered the object in view. In a statement of the causes which have operated to produce this unfortunate state of things advertised during the week, the committee, in reply to a charge which has been made against them of a neglect of duty, and with dishonourable conduct with regard to the deposits, state that, with the exception of the unexpected failure of the engineer in completing the surveys, the embarrassments have not arisen from any fault on the part of the committee, but from the neglect on the part of the applicants for shares in paying the necessary deposits at the proper time. It is true that, up to the 8th of November, they held out the most confident promises that the plans, &c., would be ready for deposit in time; but they did this on the strongest, and often repeated, assurances of Mr. Giles, their engineer, that such would be the case, and, so greatly anxious did they feel on this subject, that they requested another engineer to see Mr. Giles, to learn the progress he had made, when he offered him any required assistance, which Mr. Giles declined, and renewed his former assurances. On the 20th of November, the committee found they had been deceived; that the deposits of the plans, &c., could not be made: they found, from professional men whom they consulted, that no effort of the ablest engineer, aided by the most efficient staff, could complete them in time, and with great regret they were obliged, at the eleventh hour, to abandon all hopes of applying this year to Parliament. Upon this unexpected turn of their affairs, the committee thought it their duty to stop all further expenses, gave orders to all the bankers to receive no more deposits, and instructed the secretary to issue no more scrip; this was done on the 20th of November, and they appeal to these decisions as a proof of the rectitude of their conduct. They then took into their serious deliberation the proper means for liquidating the heavy claims upon them, and they appealed to those persons who had not paid their deposits to contribute 2*s.* per share towards the expenses, to enable them to return a portion of the deposits, and this appeal was not without effect; they still consider this the best of the proposed schemes, and will not abandon the project, but hope, next year, circumstances will be more favourable to its prosecution. It is intended to make a searching investigation into the conduct of Mr. Giles as engineer, and, if necessary, make it the subject of legal inquiry; and, we are happy to observe, a meeting is called for Wednesday, the 17th inst., for the purpose of taking into consideration the position of the company, and the steps most desirable to be taken in the present situation of affairs.

THE EARL OF ALDBOROUGH AND HOLLOWAY'S PILLS.—An astounding cure by this miraculous medicine, after every other means had failed. See extract of his lordship's letter, dated "Villa Messina, Leghorn, Feb. 21, 1845.—To Professor Holloway, Sir,—I beg to acquaint you that your pills have effected a cure of a disorder in my liver and stomach, which all the most eminent of the faculty at home and all over the continent had not been able to effect. Nay, not even the waters of Carlsbad or Marienbad. (Signed) Aldborough."—These wonderful pills will cure any disease of the liver and stomach. Sold (also Holloway's Ointment) at Professor Holloway's establishment, 244, Strand, London, and by all medicine venders throughout the civilised world.

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ON THE EMPLOYMENT OF A COLUMN OF WATER AS A MOTIVE POWER FOR PROPELLING MACHINERY.

W. G. Armstrong, Esq. (of Newcastle), delivered a lecture on this subject, to a crowded audience, at the last meeting of the Literary and Philosophical Society of Newcastle-upon-Tyne. Various articles of apparatus were placed upon the table in illustration of the nature of the pressure exerted by a column of water, and there was also a machine for producing a rotatory effect from the action of the power. A beautiful model, representing a portion of the quay of Newcastle, with a crane upon it, adapted to work by the action of the water in the street pipes, was placed upon the floor, and several diagrams, illustrative of the subject, were exhibited on the walls. Mr. Armstrong's lecture was delivered nearly as follows:—

There is no circumstance which in future ages will reflect so much honour upon this country, as its having been the cradle, if not the birth-place, of the *steam-engine*. It is scarcely possible, at the present day, sufficiently to appreciate the powerful influence which that admirable invention is exercising, in elevating the condition and promoting the happiness of mankind. It is carrying civilization to the remotest parts of the earth—it is bringing nations into friendly communication with each other—and it is dispensing all those articles of manufacture which are essential to refined and cultivated life, to millions of the human race who would otherwise be without them.

But although this greatest triumph of man's skill and ingenuity is entitled to the highest admiration, the brilliant results which have been accomplished by steam ought not to have diverted attention from other sources of motive power. While steam machinery has been advancing with rapid strides to its present wonderful state of perfection, the valuable agency of descending water as a means of propelling machinery, has been almost wholly neglected, and few attempts have been made either to extend its operation beyond those places where natural falls of water are to be found, or to increase its efficiency by improving its mode of application.

But water power, although thus treated with neglect, is possessed of capabilities scarcely inferior to those of steam, and it shall be my endeavour this evening to point out how wide a field exists for its employment, and to explain the means by which its efficacy may be increased.

The celebrated works constructed by Mr. Thom, in the neighbourhood of Greenock, have practically demonstrated a proposition which in my opinion is destined to become the foundation of the most important results—viz., That an enormous mechanical power may be realised, by collecting surface water in elevated situations, and causing it to act upon machinery, during its descent, in such a manner as to bring the entire fall into operation. You will readily perceive, that if the vast quantities of water which pour down the brooks and water-courses of hilly countries in time of rain, were to be arrested in spacious ponds or reservoirs, formed in hollows, upon the elevated lands from which the water is discharged, and were subsequently to be let out by degrees, so as to increase the volume of the streams when the natural quantity of water should be deficient, the *transient* produce of useless floods would become available as a *permanent* source of mechanical power. I am supported by numerous facts and experiments, in stating that hill side brooks and rivulets frequently run to waste in a single day, when flooded, as much water as they produce in three months of dry weather, and you may, therefore, conceive how enormously the available quantity of water would be increased by equalising the fluctuating produce of such streams by means of catch ponds or reservoirs.

This principle has been carried out by Mr. Thom to the fullest extent at the Greenock works. By throwing a barrier across a ravine, situated at an elevation of 500 feet above the level of the river Clyde, and traversed by a brook of inconsiderable magnitude, he has formed a lake or reservoir, which receives the whole of the water produced by the stream, as well during floods, as at ordinary periods. From this reservoir the water is discharged in a uniform stream, which, in its descent, falls over a succession of water-wheels, and thus a collective power of no less than 2,000 horses has been obtained from a stream, which was formerly deemed incapable of affording a twentieth part of that power.

You will observe, however, that the enormous mechanical power which has thus been brought into operation at Greenock, is attributable not only to the system of impounding surplus water, but also to the great elevation of the collecting reservoir. Water, in whatever way it be applied to machinery, is merely a descending weight, and like any other gravitating body, its mechanical effect is proportionate to the height from which it descends.

But the overshot water-wheel, although a simple and effective machine in many situations where Nature, with little aid, has supplied the fall of water, is an extremely rude and imperfect contrivance for rendering available the power of water artificially supplied from great elevations. Where the power of a stream is brought into action by a series of water-wheels, many of the wheels must necessarily be situated in places difficult of access, where power is comparatively of little value. In order, therefore, to realise to the full extent the advantages to be derived from the system of collecting water on elevated ground for mechanical purposes, a method is required of *concentrating* the power of a stream, and bringing it into action at the place most eligible for the establishment of mills and manufactories. It is also of importance that means should be provided of distributing the power to be thus obtained throughout a town, and apportioning it out to a manufacturing population, according to the extent of their wants, and without the intervention of cumbrous machinery. Water, if thus supplied as a motive power, would possess advantages greatly superior to those of steam for every purpose excepting locomotion, and localities favourable for the application of the system would, in all probability, become the sites of manufacturing towns.

I shall now, therefore, proceed to explain the methods by which I conceive these desirable objects might be obtained.

Suppose, then, in the first place, that instead of delivering water *in a stream* from a collecting reservoir, and passing it over a succession of water-wheels as practised at Greenock, a *pipe* were to be laid for the conveyance of the water from the reservoir to the foot of the descent. Suppose, further, that the column of water contained in the pipe were caused to operate *by its weight or pressure* upon suitable machinery placed at its lower extremity, we should then obtain, in the lowest and most valuable situation, *the concentrated effect* of the entire fall.

Then in order to effect the distribution of that power, it would only be necessary to ramify the lower end of the pipe so as to bring the pressure into operation at any number of points at which it should be required.

We have next to determine by what species of machine the pressure of the column of water could be most effectually brought into operation; but before I enter upon this part of the subject, I shall make a few observations, illustrated by experiment upon the nature and properties of hydraulic pressure.

Mr. Armstrong here explained the action of a column of water, showing by experiments and diagrams, that the pressure it exerted upon a given area, was proportionate to the vertical height of the column, without reference to the size of the containing tube, and was the same whether the column was perpendicular or inclined, straight or irregular. And that although the amount of pressure which a column of given height would exert might be increased to any extent by enlarging the surface acted upon, yet that the expenditure of water was always proportionate to the effect produced; and further, that although the mere pressure upon a resisting surface was the same whether the supply pipe was large or small, yet, that in order to communicate a rapid motion to that surface, a large pipe must be used, more especially if the pipe were of great length, because the rapid flow of water which is inseparable from the use of a small pipe, gives rise to a great loss of power by the friction of the water against the interior surface of the pipe.

Mr. Armstrong then explained the rotatory water-engine, which was placed upon the table, and of which a full description may be found in the *Mechanics' Magazine* for April, 1840. He then proceeded to point out the advantages which would result from the principles of impounding surplus water and causing it to act as a column, by referring to a particular stream which afforded by no means a favourable example, but which he selected on account of its being familiarly known to every inhabitant of Newcastle—viz., the Ouseburn, which flows into the Tyne immediately to the east of that town.—Suppose, he said, that instead of having a succession of six mill races and six falls, as was the case on the Ouseburn, the first mill race were continued along the banks of the stream gradually getting higher and higher above the natural channel of the brook, to within a short distance of the Tyne where a single fall of upwards of 100 feet might be obtained. Suppose, also, that the water were conveyed from this point by a pipe to any number of water pressure-engines situated in eligible situations on the margin of that river. Let it further be supposed that large catch ponds for the reception of flood water were to be formed by throwing barriers across the valley above the present site of the highest mill. By these combined operations, we should not only enormously increase the available quantity of water, and the mechanical capability of the stream, but we should also bring its concentrated power into action on the margin of a navigable river, where power would be of infinitely greater value than where the mills are now necessarily situated.

He then continued as follows:—I do not mean to contend that in a locality like this, where the expense of fuel, and consequently of steam-power, are, relatively speaking, extremely small, that it would be expedient so to deal with the stream I have mentioned, but there are multitudes of situations where streams are to be found possessing far greater capabilities than the Ouseburn, and where, if I mistake not, important manufacturing towns will eventually spring up, when the mechanical agency of water collected and supplied in the manner I have described, shall be sufficiently appreciated.

Whittle Dean, for example, which has been so much canvassed of late in connection with the new project for supplying this town and Gateshead with water, has a descent of 360 feet from the site of the proposed collecting reservoir, to the Tyne, and might be caused to yield, at the lowest point of its course, an amount of power which would appear incredible to those who do not understand how enormously the available produce of a stream may be augmented by means of accumulating reservoirs.

It may probably be said that streams of this character are most usually situated in remote and inconvenient localities, but to this it may be answered, that the water may generally be conveyed with little difficulty, in a duct or canal, to a considerable distance from the parent stream, before it is brought into operation. At Greenock the collecting reservoir is situated at a distance of nearly seven miles from the mills, to which the water is conveyed by an aqueduct, which was constructed at a very moderate expense, and the same plan might be followed in other situations, wherever the nature of the ground is favourable for the purpose. It is also to be observed that the railway system, which is now making such rapid progress in this country, is daily diminishing the importance which has been hitherto attached to *situation*, and in all probability will ultimately render almost every valley in the country conveniently accessible for the purposes of trade and manufacture. But even the water which is already supplied to towns for domestic and manufacturing uses, may in many cases be applied, with great economy and advantage, to various mechanical purposes, and there are few towns in England more favourably circumstanced for making the experiment than Newcastle, where the great altitude of the service reservoirs by which the town is already supplied, as well as of those which are about to be constructed, offer peculiar inducements for such an employment of the water.

The obtainment of water of a suitable quality for household use, is usually attended with too much expense to permit of the same water being used mechanically, on a large scale, as a substitute for steam, but as a substitute for manual labour, as applied to a numerous class of machines, which cannot be profitably worked by steam, it will be found a cheap and most convenient power. Human labour is at once the most costly, and the least effective of all the motive powers that are applied to machinery, and yet, for want of a suitable substitute, men are daily employed, to a great extent, in all trading and manufacturing towns, in no higher capacity than beasts of burden, for the mere purpose of producing motion, in cases where the exercise of skill and intelligence are wholly excluded. Amongst the many examples that might be given of this kind of labour, I may mention the lifting of heavy goods upon wharfs or in warehouses. The numerous ships, for instance, which frequent the quay of this town, are all loaded and unloaded by mere personal strength applied to cranes or other lifting machinery, the whole of which might be worked at much less expense, with far greater expedition, and consequently with much less detention to ships, by means of the pressure which exists in the street water pipes, than by the present method.

In order to illustrate the practicability and advantage of such an application of the water by which this town is already supplied, I have had a model constructed which will enable me to explain the matter experimentally to you.

Mr. Armstrong then described the model of the crane, which, so far as external appearances were concerned, was an exact representation of one of the cranes now used upon the quay, and which was adapted to show in contrast the present operation of lifting goods, and the proposed plan of raising them by the action of the water. The machine was put in action by a supply of water conveyed into the room, at a high pressure, by a lead pipe, and, although the sudden frost which had set in, unfortunately interfered in some degree with the temporary means of supply which had been provided, Mr. Armstrong was enabled to show, in a most satisfactory manner, the perfect precision of the machine, its great power, and the important saving of time and expense which would result from its employment. The operations of lifting and lowering weights, and of turning the crane to either side, were all directed and controlled by the motion of a pointer upon an index plate. After describing the external part of the apparatus, Mr. Armstrong removed a portion of the model which represented part of the quay, and exposed to view a vault or tunnel, which contained the machinery. This was of a very simple description, consisting of two horizontal pipes or pumps, equal in length to the maximum height to which goods were required to be lifted. When weights under two tons were to be raised, the chain was to be hooked on to the piston rod of the smaller pipe, which, in practice, with the pressure attainable on the quay, would require to be six or seven inches in diameter. For greater weights, up to eight tons, the chain would be attached to the piston rod of the large pipe, which would be twelve or fourteen inches in diameter. The water on entering either of the pipes, forced along the piston and pulled the chain, and on being allowed to escape, the piston returned and lowered the weight. A very simple adjustment of valves regulated the ingress and egress of the water, and determined the speed at which the weight was to be lifted or lowered. A small double-acting cylinder turned the crane, by pulling a chain coiled in opposite directions round its stem, below the surface of the ground, and by a very simple arrangement, the circular motion of the crane was rendered compatible with the hydraulic part of the mechanism being a fixture.

Mr. Armstrong further showed that means were provided for preventing the abrupt stoppage of the water which might endanger the safety pipes, so that it was impossible for the most careless person to injure the apparatus; and he also stated that the cost of the water which would be expended in raising a given weight by the proposed plan, would be about one-third or one-fourth of the expense of raising a similar weight by the present method. He then proceeded as follows:—

The limits of a single lecture will not permit me to detail the particular modes in which hydraulic pressure from town water-works, such as we have in Newcastle, might be applied to other mechanical operations besides that which I have mentioned; but I am persuaded that the cases in which it might be profitably employed are exceedingly numerous. Its fitness for all kinds of machinery for lifting weights, whether with quick motions or slow, is easily shown, and it is my strong opinion that in small establishments of various kinds, where the quantity of work is insufficient to justify the erection and maintenance of a steam-engine, it would prove extremely valuable as a means of giving motion to lathes, printing-presses, machines for performing the operations of drilling, boring, punching, planing and clipping metals, revolving saws, forge hammers, and so forth, especially where such machines are only required to be in action, as is usually the case, at uncertain periods, and with frequent intervals of rest, for the power we are discussing has this admirable property which is not possessed by the steam-engine—viz., that it is always ready for action without occasioning expense except when in actual operation. Its application, therefore, to cranes, which I have illustrated by a model, must merely be regarded as a specimen of the capability of a system, which I hope and believe will gradually make its way in this and other towns, and eventually be productive of much public advantage.

The substitution of inanimate power for human labour must unfortunately always be attended in the first instance with the evil of depriving individuals of employment, but the general welfare of the community is unquestionably promoted in every instance in which we succeed in coercing insensible agents into our service, for the purpose of moving machinery. Man was designed to work by his head rather than by the mere strength of his arm, and as he continues to extend his dominion over the powers of Nature, his occupations will gradually assume less of the physical, and more of the intellectual, character. The employment of steam power on a large scale for the purpose of generating hydraulic pressure, to be diffused through a town for the propulsion of machinery, or to be exercised in mines for underground traction, are branches of the subject which I am compelled to postpone to some future occasion, and in conclusion I shall merely observe that an outline of the views to which I have this evening directed your attention, and which I have long entertained on the subject of water power, may be found in a paper which I published in the *Mechanics' Magazine* for April, 1840. I am induced to refer to this paper because I am informed that a company has recently been projected in London for supplying water at a high pressure, exclusively for mechanical purposes, and I naturally feel a disposition to assert my title to priority in the suggestion of the principle. I am quite unacquainted with the particulars of the scheme to which I allude, and although I fully believe that such projects will eventually succeed, I fear the time has scarcely yet arrived for carrying them into execution. It would be better to introduce the system by degrees, in conjunction with the supplying of water for domestic and other ordinary purposes, rather than to run the risk of failure by attempting more than the age is ripe for. It was my intention to have been provided this evening with another model for your inspection, in further illustration of my views, but want of leisure has prevented its completion. I shall most probably, however, return to the subject at a future period, and hope to be then able to afford you some additional proofs of the utility of a column of water as a moving power for machinery.

LITERARY NOTICES.

Double Entry Elucidated; an Improved Method of Teaching Book-keeping. By B. F. Foster. London: Souter and Law, Fleet-street.

Rarely does it happen that a boy, on leaving school, brings with him more than a mere mechanical idea of the nature of book-keeping by double entry; books ruled, according to formula, in which he has been taught to make *Dr.*, all he receives, and *Cr.*, all he delivers, are exhibited to his admiring friends as his proficiency in the art; but examine him, and he will be found totally ignorant of the true principles of book-keeping, and requiring considerable practical schooling before he is made proficient. It appears strange that such a general rule should prevail respecting a branch of useful knowledge, in which there is little intricacy; but the instruction hitherto conveyed has been inadequate and unscientific, and the mind of the pupil has become wearied with the perplexity of his own ideas, and his endeavour to apply the untenable rules laid down. It is astonishing, in this commercial age, that this error has been allowed so long to reign in our schools. Mr. Foster appears to be the first who has properly grappled with the subject, and has adopted a system of instruction by which the whole is fairly laid before his pupil with the utmost accuracy, and the clearest reasons given for every transaction. He begins with the ledger as the *first*, and not the *last*, book to which his attention is directed; and being made to comprehend the arrangement of the ledger accounts, he is master of the system, and can afterwards journalise the most difficult subjects with facility. The work is divided into four parts—1. Theory. 2. Initiatory Exercises. 3. Memorandums of Transactions. 4. Key; and the whole science is laid down in the most clear and comprehensive manner; and is not only valuable as a school-book, but will prove an excellent companion to many a young aspirant of the desk.

The Railway Register—December, 1845.

The Number for this month is unusually attractive on that all-engrossing subject—railways. It opens with the fifth section of the Essay on Railways in Ireland, principally upon the economy of various kinds of fuel—such as anthracite, coal, coke, peat, and Mr. Williams's composition of peat and coal—the result of which agrees with the calculations in Dr. Kane's work—viz., that 1-horse power of steam costs per day, when using coals, 7½d.; turf, when properly dried, 6d.; and Mr. Williams's composition, 5½d. There is an excellent article on the "Metropolitan Improvements," in which is suggested the establishment of another Bank and Royal Exchange, on the site of Smithfield Market, to divide the immense living streams which now pour through the principal thoroughfares—the appropriation of Farringdon Market, the site of the Fleet Prison, and the large space about West-street, Sharp's-alley, &c., for railway termini, &c., and that important, but difficult subject to deal with, the housing of the working classes, when driven from their present unhealthy and crowded haunts. The subject is well handled, and will pay for perusal. Railway notices, meetings, &c., complete the volume.

The Railway Review—December, 1845.

This is the Third Number of another periodical among the many devoted to railway enterprise, and the various projects relating to the investment of capital. It has come before the public in a dress calculated to give satisfaction and to obtain a position among its rivals; the arrangement of the matter is of the best order—the meetings during the preceding month are classified as "half-yearly," "special," "first general," &c., and placed in chronological order in one part of the volume. The contents of the present Number are—"Reflections on the Railway Movement"—No. I.; "French Railway Correspondence;" "German ditto;" "Atmospheric Propulsion"—No. I.; and an article on the "Improvement of Towns," followed by the "Meetings of Railway Companies," "Share Lists," "Railway Notices," &c. The whole forms a comprehensive record of the railway progress of the month, and will most probably receive that encouragement which it undoubtedly merits.

Simmonds's Colonial Magazine.

We have received the December Number of this work, being the first which has come to hand for many months. It contains several interesting communications on colonial matters; among these are "Colonial Railways and their Prospects," in which having, it appears, in former numbers, considered the railways announced, or in progress of formation, for the West Indies and British North America, the colonies in the eastern hemisphere are next considered, commencing with Australia; the author observes—"The vast continent of New South Wales seems destined shortly to partake of the benefits of increased English capital and the advantages of railway communication to facilitate the transit of goods and passengers throughout its vast length and breadth. Two or three companies have taken the subject into consideration in the mother country, and a useful project has been mooted in the colony, so that it will not be a very distant day before some steps are taken to carry on this useful work." An important letter follows, by the Rev. Dr. Lang, "On the Construction of Railways in the Colonies," some extracts from which we should have been glad to insert had our space permitted; it enters more particularly into the question of cost, and is well-worthy perusal. There is some lighter reading, under the title of "Reminiscences of the Isle of Cuba," and "The Emigrant," a tale of Australia. Some other colonial information and correspondence, of an interesting nature, completes the number for the present month.

Important Discovery for Finding the Altitude of the Sun in very Cloudy Weather.—A letter has been addressed to the Committee of Lloyd's, by a Mr. Ham, of Victoria-street, Norwich, relative to a discovery made by him for ascertaining with exactness the altitude of the sun in very cloudy weather. To the maritime interest of the world this discovery is of the greatest importance, as it will enable commanders of vessels to ascertain the latitude and longitude of their ship "by observation," when otherwise they would have to rely upon their "dead reckoning" merely. The extent of the importance and value of this discovery—if upon unerring principles—can only be conceived by those who will have the opportunity of testing its accuracy. The Committee of Lloyd's, in reply to Mr. Ham, refer to the great interest with which the nautical world will necessarily view the discovery, and their readiness to assist him in making it known for the benefit of all interested.

Important Nautical Invention.—Last week a meeting of shipowners, shipmasters, and others interested in shipping, was held in Dundee, for the purpose of receiving a description of a new apparatus for steering vessels, the invention of Mr. Robert Clerk of Newburgh. Mr. Clerk's improvement, which combines in a high degree simplicity of design with strength and general efficiency, consists in communicating the motion of the rudder by means of an endless screw at one side of the rudder, working in the segment of a rack wheel firmly fixed on the rudder head. The screw is put in motion by means of an ordinary steering wheel, and a chain communicating between the barrel of the wheel and the axis of the screw. The great advantages of this apparatus are, an immense increase of power, and the absence of any necessity for lashing the wheel when the vessel is hove-to, or when there is occasion to leave the wheel, as the rudder remains firmly fixed until motion is again given to it by means of the wheel; and in the event of the vessel taking ground the apparatus admits of the rudder rising and falling again into its place without deranging any part of the machinery. The gentlemen present minutely examined the invention; and, after some conversation, they unanimously agreed to express their entire approval of it, and their conviction that its adoption would be highly beneficial.—*Dundee Courier.*

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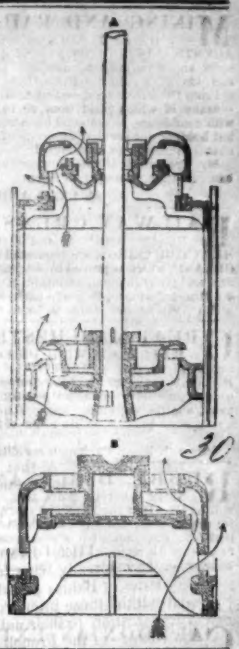
PATENT VALVES,
APPLICABLE TO PUMPS OF EVERY DESCRIPTION.

The superiority of these valves, as economical in respect both of trouble and expense, has been proved by the experience of their GENERAL USE for more than SEVEN YEARS

The patentees refer to nearly all the water-works, engineers in the kingdom, by whom satisfactory testimonials have been freely given.

The principle adopted is that of "OBTAINING THE GREATEST WATER PASSAGE BY THE LEAST POSSIBLE PRESSURE AREA," thereby avoiding the great concussion occasioned by the closing of ordinary valves, and the loss caused by letting in air under them.

Until the invention of these valves (first used at the East London Water-Works), the most economical mode of raising water—viz., by the plunger-pump, and the principle of expansive steam, as practised in Cornwall, was impracticable for water-works purposes.



Sketch A shows the manner in which the valves have been applied to air-pumps of steam-engines.
Sketch B, the manner of their application to pumps for lifting water.
The Valves are shown open in both Sketches.

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THE PATENT GALVANISED IRON COMPANY
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The SLIPS, or SHEDS, for building "first-rates," in the ROYAL DOCKYARDS, at Woolwich, Portsmouth, Deptford, &c. (the latter visible in passing down the Thames, and is an object of great beauty, having a centre span of eighty-two feet). The Timber Sheds, and other buildings, in the Royal Dockyards, are also being roofed and constructed with this fire-proof material.
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For chain rigging, wire rigging, and sheathing, it is extensively used, and the following CERTIFICATE, amongst many others, is affixed:—

Lloyd's Register, *London*, February 7, 1845,
2, White Lion-court, Cornhill.

The undersigned surveyors to this society did, at the request of Messrs. Mallins and Rawlinsons, examine the Patent Galvanised Iron Sheathing upon the bottom of the brig *Mary Stewart*, lying in Messrs. Curling, Young, and Co.'s dry dock, Limehouse, and lately returned from a voyage to the island of Ichaboe, on the coast of Africa, and found it unbroken and perfect throughout the vessel's bottom, and no appearance of corrosion or oxide of iron upon its surface. The iron that had been exposed by puncturing the nail holes had become coated with zinc—the sheathing was nearly clean, and free from marine grass and animalculæ. It appears to have answered very well during the before-mentioned voyage, and the ship has sailed without it being found necessary to do any repairs to it.
PETER COURTENAY,
I. H. RITCHIE,
JAMES MARTIN,
} Lloyd's Surveyors.

The company are prepared to supply all articles required, or execute work of every description.
Works—London, at Millwall, Poplar, near West India Docks; Staffordshire, Phœnix and Lea Brook Iron-Works—from which corrugated iron and every description of iron, galvanised or otherwise, can be supplied; also, from the South Wales Works, near Bridgend, Glamorganshire.
Office—3, Mansion-house-place, London.

CAUTION AND NOTICE.

This GREAT PATENT, like every good one, is invaded, and, by the law's delays (and its miserable state as regards the interests of patentees), the parties are able to evade the consequences some short time longer. The same thing has occurred with other patents. In Neilson's Hot-Blast Patent the invasion went on for years: but one firm only had at last to pay upwards of (£120,000) ONE HUNDRED AND TWENTY THOUSAND POUNDS PENALTIES. BUYERS as well as SELLERS are LIABLE, and the PATENTEES will PROCEED AGAINST all PARTIES who INVADE this—one of the most IMPORTANT INVENTIONS ever brought into use.
Actions are proceeding against Messrs. Morewood and Rogers, Messrs. Walker (Gospel Oak), and many others.
The company take this opportunity of giving the most unequivocal contradiction to the advertisement issued by Messrs. Morewood and Rogers on 8th August.

PATENT GALVANISED TINNED IRON.
MOREWOOD and ROGERS' PATENT.
The PATENTEES beg to call the attention of the PUBLIC to the ABOVE METAL, which is being USED extensively by the LORDS COMMISSIONERS of the ADMIRALTY, the BOARD OF ORDNANCE, and OTHER PUBLIC BODIES,
FOR ROOFING AND OTHER PURPOSES.
The large WAREHOUSES and SHEDS in the LIVERPOOL DOCKS have had the ZINC with which they were formerly covered STRIPPED OFF, for the purpose of being COVERED WITH IT; and the NEW DOCK WAREHOUSES of that city are likewise being COVERED WITH THIS METAL.
It is peculiarly ADAPTED for RAILWAY STATIONS, as forming a light, strong, and incorrodible covering.
This PROCESS is the ONLY ONE by which the QUALITY of the IRON is PRESERVED, instead of being injured; and it is, therefore, so very malleable, that it may be worked up with the greatest ease into articles of all descriptions.
Further information may be obtained on application at the WAREHOUSE
No. 9, STEEL-YARD UPPER THAMES-STREET

THE PATENT GALVANISED IRON COMPANY.
—CAUTION.—The public are cautioned against giving credit to the mis-statements put forth by the Galvanised Iron Company in their advertisement.
The ONLY ACTION proceeding in regard to this Patent is one, NOT AGAINST MOREWOOD AND ROGERS, OR ANY OTHER PARTY CONNECTED WITH THEM, BUT A WRIT OF *SCIRE FACIAS* AGAINST THE COMPANY'S PATENT FOR ITS CANCELLATION.
Nothing can be more unfortunate than the comparison between this Patent and that of Neilson's, which was held by the jury to be valid, whereas THAT OF THE GALVANISED IRON COMPANY WAS, AFTER THREE DAYS' TRIAL, FOUND, UPON THEIR OWN EVIDENCE, TO BE INVALID.
They assert that their Patent is being invaded—this we entirely deny; and to show the folly of the charge, the working of it was found by the jury to be impracticable. No one—not even they themselves—ever have, or ever will be able to work it.
In working as they now do, they have ADOPTED PART OF OUR PROCESS, specified in our patent, WITHOUT OUR LEAVE OR LICENCE.
With regard to delay, it has been entirely on their part, as the records of the courts will prove. They have availed themselves of every opportunity to hinder and delay the *scire facias*, now proceeding, by applications for time, &c.; and, finally, by putting in a plea, which their solicitor swore, he believed, to be necessary for the defence of their patent from cancellation, but which the Lord Chancellor, on Monday last, refused to admit, and dismissed their appeal with costs.
MOREWOOD AND ROGERS,
Patentees of Galvanised Tinned Iron.
August 29, 1845. Warehouse, 9, Steel-yard, Upper Thames-street.

PATENT GALVANISED IRON COMPANY.—NOTICE.
—This patent was decided by the Jury, in Patteson *v.* Holland, tried in the Common Pleas in February last, to be *invalid*, and their verdict has not been set aside. The delay in actually cancelling the patent by the *scire facias* issued for that purpose, is solely ascribable to the patentees resorting to frivolous and dilatory measures for postponing the proceedings—thus showing that they well know how such proceedings must terminate.

BY HER MAJESTY'S ROYAL LETTERS PATENT.
SMART'S ELLIPTICAL CONVEX METALLIC PADDLE FLOATS, FOR PROPELLING STEAM-SHIPS.—The very great superiority of this invention over the common float, in *all points*, having been fully proved by its use on various steamers of from 90 to upwards of 200-horse power—and applications being made for licensing several iron steamers, from 70 to 300-horse power, the patentee confidently recommends it to the Government and the public generally.
Its superiority consists, in beauty of appearance, stability, durability, its property of greatly reducing vibration and undulation, inexpensiveness, powerful agency in checking a ship in chance of collision—and what is of the greatest consequence, giving an immense increase of speed. All these must have a powerful influence, not only on steam proprietors, but more especially on the minds of the steam-travelling public.
These Floats can be easily applied to any wheel.
Applications for license (for which a fee of 10s. per horse-power is charged) to be made to the patentee, Mr. Robert Smart, 5, Grenville-place, Hotwells, Bristol, or his agents.

PAYNE'S PATENT PROCESS FOR THE PRESERVATION AND IMPROVEMENT OF TIMBER, &c.—PAYNE and LODER beg to invite the attention of Engineers, Railway Companies, Architects, and others, to the ABOVE PROCESS, and to state that they are prepared to ERECT the necessary APPARATUS in any part of the United Kingdom, where the quantity is sufficiently large to cover the outlay of its removal.—Further particulars can be obtained at WHITEHALL WHARF, CANNON-ROW, WESTMINSTER, or at their other stations—
FLEETWOOD-ON-WYRE, LANCASHIRE, UNION WHARF, SOUTHAMPTON, and
WISBEACH, CAMBRIDGESHIRE, GUILDFORD, SURREY.

MINING AND RAILWAY OFFICES, 16, CORNHILL.—Mr. R. TREDINNICK (of Cornwall) having established PRACTICAL AGENTS and CORRESPONDENTS in every MINING DISTRICT, whereby he obtains early and accurate information respecting MINES, proffers his services to capitalists and adventurers in the PURCHASE and DISPOSAL of SHARES.

From the success consequent upon the working of mines both in England and Ireland—many of which yield from 20 to 50 per cent. upon the outlay—Mr. Tredinnick can with confidence recommend investment therein, as being not only highly remunerative, but holding out peculiar inducements at the present time, from the low price at which shares in many can be obtained.

Mr. Tredinnick affords every information, on personal application, gratuitously, and can recommend competent Agents for inspecting and reporting on mines. 37

A LEAD AND COPPER MINE WANTED.

RAILWAY GREASE.—RAILROAD CONTRACTORS, MINING AGENTS, and OTHERS, who require a FINE CHEAP GREASE for HEAVY BEARINGS, are requested to TRY JOSEPH TURNBULL'S ANTI-FRICTION GREASE, which is proved by scientific men to surpass all others for its lubricating qualities, and for cheapness.—Samples and price, per return of post, by applying to F. Taylor, 45, Munster-square, Regent's-park, SOLE AGENT FOR LONDON. 38

P.S.—Sing'e and double jacks, to raise from two to twenty tons, at wholesale prices.

GREAT MANCHESTER, RUGBY, AND SOUTHAMPTON RAILWAY, WITH DIRECT LINE FROM DERBY TO RUGBY.—Notice is hereby given, that a MEETING of the shareholders in the above undertaking will be HOLDEN at the offices of the company, on Wednesday, the 17th inst., at Twelve for One o'clock precisely, for the purpose of taking into consideration the position of the company, and the steps most desirable for adoption with reference to the same. 39

By order of the committee of management,
HORATIO CARTER, Assistant Secretary.

Offices, 1, Royal Exchange-buildings, Dec. 9, 1845.

RUGBY, DERBY, AND MANCHESTER RAILWAY.—Notice is hereby given, that a MEETING of the shareholders in this undertaking will be HELD at the London Tavern, Bishopsgate-street, on Wednesday, the 17th day of December inst., at Eleven for Twelve o'clock precisely, for the purpose of receiving a report from the committee of management, and deciding upon the steps it will be advisable to adopt with reference to the prosecution of the undertaking in the next session of Parliament, or otherwise. (Signed) MATTHEW PIERPOINT, Chairman of the Committee of Management.
WILLIAM RICHARD SCOTT, } Secretaries.
33, Gresham-street, Dec. 9. HORACE GREEN, } 40

CALEDONIAN EXTENSION RAILWAY.—The shareholders are respectfully informed, that the Plans, Sections, and Books of Reference of this railway have been duly deposited at the office of the Board of Trade, and the offices of the several Sheriff Clerks of the Counties through which the line passes, and the requisite notices given, in conformity with the Standing Orders of Parliament.
Lanark, Dec. 1, 1845. JOHN MARR, Secretary. 41

CALEDONIAN RAILWAY.—NOTICE.—RESOLUTIONS passed at an Extraordinary General Meeting of the shareholders, held within the Royal Hotel, Edinburgh, upon Wednesday, the 5th day of November, 1845, (J. J. Hope Johnstone, Esq., of Annandale, M. P., chairman of the company, in the chair):—

1. That the arrangements made by the directors for the acquisition of the Glasgow, Garnkirk, and Coatbridge Railway, and the leasing and working of the Caledonian and Dumbarton Junction Railway, be approved of and confirmed.

2. That the arrangement made by the directors for amalgamating the Clydesdale Junction Railway, including the Pollce and Govan Railway, with the Caledonian Railway, be approved of and confirmed. 42

3. That this company shall undertake the several branches and stations and other works specified in the notice calling this meeting, as the same are more fully detailed in the Parliamentary notices, or such of the said works, and with such modifications, as the directors may deem expedient.

4. That the capital stock of the amalgamated Caledonian and Clydesdale Junction Railway Companies, amounting to £2,550,000, be augmented by the sum of £1,275,000, to be raised by the creation of 51,000 new shares of £25 each; that these shares be allotted among the shareholders of the said amalgamated companies, in the proportion of one new share of £25 for each original share of £50; and that the directors be empowered to issue scrip, and take such other steps as may be necessary in reference to the creation and allocation of the said new shares.

5. That the directors be authorized to apply to Parliament for an act or acts for carrying into effect the several new works and other objects above referred to.

(Signed) J. J. HOPE JOHNSTONE, Chairman.

In terms of the above resolutions, the directors hereby intimate that letters of allotment of the new stock will be issued to such of the shareholders as stand registered in the books of the amalgamated companies on the 1st of December next, and they will be required to pay the Parliamentary deposit of £2 10s. per share on or before the 20th of December, at the banks to be specified in the letters of allotment, and to sign the Parliamentary contract and subscribers' agreement within ten days thereafter; and if any parties shall fail to pay the deposit, or to sign the deeds, within the respective periods above stated, the right of such party to the new stock shall cease, and the same shall be disposed of by the directors without farther notice.

By order of the board,
(Signed) J. J. HOPE JOHNSTONE, Chairman.
D. RANKINE, Secretary.

Caledonian Railway Office, 122, Prince's-street, Edinburgh, Nov 6.

OXFORD, THAME, HIGH WYCOMBE, AND UXBRIDGE JUNCTION RAILWAY.
OFFICE, No. 43, MOORGATE-STREET.

MANAGING COMMITTEE.
HUBERT DE BURGH, Esq., Chairman.
Viscount CURZON, Deputy-Chairman. 43

Lord Albert Conyngham	A. W. Hillary, Esq.
Lieut.-Colonel Lothian Dickson	Deane John Hoare, Esq.
Charles Collins, Esq.	John Lane, Esq.
Thomas Edwards, Esq.	Malcolm Macleay, Esq.

Richard Twiss, Esq.

The committee of management having deferred closing their share lists until they were assured that the Standing Orders of Parliament had been complied with—the plans and sections having been only deposited with the Board of Trade and the several Clerks of the Peace of the counties through which the line passes—they now give Notice, that NO APPLICATION for SHARES will be received after the 27th inst.; and, until that period, they will be received at the offices of the company, 43, Moorgate-street, and of their solicitor, F. T. Gell, Esq., Carlton Chambers, 8, Regent-street, and of the following brokers:—R. H. Wilkins, Esq., 4, Bank Chambers, London; Henry Brenchley, Esq., Cushion-court, Old Broad-street, London. R. MORTON CALEY, Secretary.

OXFORD AND SALISBURY DIRECT RAILWAY.

CHAIRMAN—THOMAS DOWGLASSE, Esq.
ENGINEER-IN-CHIEF—Samuel Charles Brees, Esq.
SOLICITORS—Messrs. Elmslie and Preston, 47, Moorgate-street. 44
SECRETARY—Z. Hubbersty, Esq.

The committee of management beg to announce that, in compliance with the applications and suggestions of several gentlemen of experience, they have instructed the several bankers named in their letters of allotment to continue to receive the preliminary deposits from this time until the 7th of January next, in order that those parties to whom share in this company have been allotted may consult their own convenience, by paying the first deposit at the present time, or paying the whole deposit on or before the 7th of January next. By order of the board,
Moorgate Chambers, Moorgate-street, Dec. 9, 1845. Z. HUBBERSTY, Sec.

SIR WILLIAM BURNETT'S PATENT, FOR THE PRESERVATION OF TIMBER, CANVAS, CORDAGE, COTTON, WOOLLEN, &c., FROM DECAY. *TESTIMONIALS.*

From THOMAS GRAHAM, Esq., M.A., F.R.S., L. and E., Professor of Chemistry, University College, London.

"After making several experiments on wood prepared by the Solution of Chloride of Zinc, for the purpose of preservation, and given the subject my best consideration, I have come to the following conclusions:—

"The wood appears to be fully and deeply penetrated by the metallic salt; I have found it in the centre of a large prepared paving block.

"The salt, although very soluble, does not leave the wood easily when exposed to the weather, or buried in dry or damp earth. It does not come to the surface of the wood by efflorescence, like the crystallisable salts. I have no doubt, indeed, that the greater part of the salt will remain in the wood for years, when employed for railway sleepers, or such purposes. This may be of material consequence when the wood is exposed to the attacks of insects—such as the white ant in India, which I believe would be repelled by the poisonous metallic salt.

"After being long macerated in cold water, *or even boiled in water*, thin chips of the prepared wood *retain a sensible quantity of the oxide of zinc;* which I confirmed by Mr. Teplis's test, and observing that the wood can be permanently dyed from being charged with a metallic mordant.

"I have no doubt, from repeated observations made during several years, of the valuable preservative qualities of the Solution of Chloride of Zinc, as applied in Sir W. Burnett's process; and would refer its beneficial action chiefly to the small quantity of the *metallic salt which is permanently retained by the ligneous fibre in all circumstances of exposure.* The oxide of zinc appears to alter and harden the FIBRE of wood and destroy the solubility, and prevent the tendency to decomposition of the azotised principles it contains, by entering into chemical combination with them.

(Signed) "THOMAS GRAHAM."

"University College, Oct. 25, 1845." 45

From Professors BRANDE and COOPER.

"London, November 4, 1845.

"SIR,—We have this day again examined the specimens of canvas and wood prepared according to the specification of your patent, and which, in the month of April, 1844, we placed in a damp cellar, where they have remained up to this date.

"We are now enabled satisfactorily to corroborate the favourable opinion expressed in our former report. The canvas remains amply protected from all fungous vegetation and rottenness, while a corresponding sample of the same piece, which had not been prepared by immersion in the solution of chloride of zinc, is entirely decayed, being mouldy, rotten, black, and in places resembles tinder.

"We have also lately compared the strength of a fibre of a piece of canvas which we prepared according to your specification, in October, 1844, with that of the fibre of the same canvas, unprepared, and find that it has in that respect sustained no injury. We are, therefore, of opinion, that your process will not, after any lapse of time, tend to deteriorate the strength of the fibres of the substances in question.

"In regard to the several samples of different species of wood above adverted to, each of which was cut into two, one-half being imbued according to the directions of your specification with the dilute solution of chloride of zinc, while the other half was left in its original condition, we have also to make a favourable report, and to repeat our opinion of the efficacy of your process as a preventative of dry-rot, and similar sources of decay; the unprepared specimens are manifesting symptoms of decay and mildew, while those which have been protected by your preparation are clean and sound.

(Signed) "WILLIAM THOMAS BRANDE,
"JOHN THOMAS COOPER."

"To Sir William Burnett, K.C.H., F.R.S., &c. &c."

Testimonials from numerous other parties may be obtained on application, personally, or by letter to the secretary, and specimens may be seen at the office, 53, King William-street, London-bridge.

ROYAL NORTH OF SPAIN RAILWAY.—The directors hereby give Notice, that a GENERAL MEETING of the shareholders of the above company will be HELD at the London Tavern, Bishopsgate-street, on Friday, the 19th instant, at One o'clock precisely, when the directors will submit a report of their entire proceedings to the proprietary, and a statement of the present position of the affairs of this company, for the purpose of taking into consideration the most desirable course to be adopted under existing circumstances. By order. 46

No. 1, Royal Exchange-buildings, Dec. 10, 1845. T. S. CUTHILL, Secretary.

BRISTOL AND EXETER RAILWAY—THIRD SHARES—CALL OF THREE POUNDS PER SHARE (making, with the deposit, Five Pounds per share).—The directors of this company, under the provisions of the Act of Parliament, hereby give Notice, that the proprietors of THIRD SHARES are required to PAY, on or before Thursday, the 15th of January, 1846, at any of the undermentioned banks, the sum of THREE POUNDS on each of their respective Third Shares.

In London	Messrs. Glyn, Halifax, Mills, and Co.	
Liverpool	The Bank of Liverpool	
Manchester	Messrs. W. Jones Loyd and Co.	
Bristol	Messrs. Miles, Harford, and Co.	
	" Baillies, Ames, and Co.	
	" Stuckey and Co.'s Banking Company	47
	The West of England and South Wales District Bank	
	The National Provincial Bank	Or either of their branches.
Exeter	The Devon and Cornwall Banking Company	
	The National Provincial Banking Company	
	The West of England and South Wales District Bank	
	Messrs. Sanders and Co.	

who are instructed to charge interest at the rate of 5 per cent. per annum on all payments made after the said 15th day of January next. By order of the directors.
Office, 20, Broad-street, Bristol, Nov. 28, 1845. J. B. BADHAM, Sec.

NEWCASTLE-UPON-TYNE, EDINBURGH, AND DIRECT GLASGOW JUNCTION RAILWAY,
WITH A BRANCH BY THE NORTH TYNE TO HEXHAM.

Capital £1,500,000, in 75,000 shares, of £20 each.—Deposit £2 2s. per share.
Provisionally Registered, pursuant to 7 and 8 Vic., cap. 110.

PROVISIONAL COMMITTEE.
Sir Charles M. L. Monck, Bart. Belsay Castle, Northumberland
S. C. H. Ogle, Esq. M.P., Kirkley Hall, Northumberland
William Henry Charlton, Esq. Hesleyside, Northumberland
Robert Charlton, Esq. Lee Hall, Northumberland
Thomas Cookson, Esq. Swinburne Castle, Northumberland
Mr. John Crawford, paper manufacturer, Warden, Northumberland
Mr. Edw. Campion, iron manufacturer, Hareshaw Iron-Works, Northumberland
Ralph William Grey, Esq. Chipchase Castle, Northumberland
Mr. John Green, iron manufacturer, Ridsdale Iron-Works, Northumberland
Mr. William Grace, Saltwick, Northumberland
J. Haggerston, Esq. Reedsmouth, Northumberland
Nicholas Maughan, Esq. Newbrough Lodge, Northumberland
Charles Atticus Monck, Esq. Hunshaugh, Northumberland
Thomas James, Esq. Otterburn Tower, Northumberland
Mr. W. R. Rayne, paper manufacturer, Haughton, Northumberland
Smith Stobart, Esq. banker, Hexham Abbey, Northumberland
Captain R. Jobling, Newton Hall, Northumberland
Rev. William Kell, Rector of Corsenside, Northumberland
W. C. Trevelyan, jun. Esq. Topsham, Devon
Sir John Fife, Knt. Newcastle-upon-Tyne
Mr. Thomas Gray, tobacco manufacturer, Newcastle-upon-Tyne
Mr. Charles Rayne, merchant, Newcastle-upon-Tyne
Mr. Henry Glynn, C.E., Newcastle-upon-Tyne
Mr. William Anderson, jun. coal owner, Newcastle-upon-Tyne
Mr. William Hunter, colliery viewer, Newcastle-upon-Tyne 48
Mr. John Coulson, Newcastle-upon-Tyne
Mr. Alexander George Gray, merchant, Newcastle-upon-Tyne
Captain John Kelly, Newcastle-upon-Tyne
T. C. Granger, Esq. M.P., Durham
Andrew White, Esq. Tunstal Lodge, Sunderland
Richard White, Esq. Thorney-close, Sunderland
A. J. Moore, Esq. Hill House, Sunderland
Mr. Michael Brown, merchant, Sunderland
Hugh Dixon, Esq. manufacturer, Sunderland
Thomas Bell, Esq. Alkali Manufactory, South Shields
Mr. Joshua Greene, merchant, Gateshead
William Hymers, Esq. J.P., Gateshead
Sir Thomas Dick Lauder, Bart. Grange, and Fountain Hall
C. Craigie Hackett, Esq. Lawhill
John Dick Lauder, Esq. jun., Grange, and Fountain Hall
Andrew Wilkie, Esq. one of the magistrates of Edinburgh
William Girdwood, Esq. magistrate of Leith
Robert Laurie, Esq. merchant, Leith
John Anderson, Esq. jun., merchant, Edinburgh
John Gibson, Esq. Provost of Lanark
Thomas Brownlie, Esq. Convener Trades House, Glasgow
William Bankier, Esq. Provost of Calton, Glasgow
James Wolfe Murray, Esq. St. Andrew's, Fife
Sir John Trevelyan, Bart., Wallington, Northumberland
Walter Calverley Trevelyan, Esq., Wallington, Northumberland
Wm. Oliver Rutherford, Esq., of Edgerston, sheriff of the county of Roxburgh
(With power to add to their number.)

BANKERS.
London—Messrs. Glyn and Co.
Newcastle-upon-Tyne—The Northumberland and Durham District Bank.

ENGINEER-IN-CHIEF—John Miller, Esq., C.E., Edinburgh.
LOCAL ENGINEERS—Messrs. John and Benjamin Green.

SOLICITORS.
Mr. John Brown, and Messrs. Laws and Glynn, Newcastle-upon-Tyne.
Messrs. Prichard and Collette, 57, Lincoln's Inn-fields, London

LOCAL AGENTS.
Mr. C. R. Sinclair, S.S.C, 11, South-bridge, Edinburgh; Messrs. J. & R. Gibson, Hexham; Messrs. Strang, Yuile, & Keydon, writers, Glasgow; Mr. Wm. Blackwood, banker and solicitor, Peebles; Mr. Simon Scott, writer, Jedburgh; Mr. G. Oliver, writer, Hawick; Messrs. Curle and Erskine, writers, Melrose.

PARLIAMENTARY AGENTS—Messrs. Spottiswoode and Robertson, Gt. George-st., London.

SECRETARY—Mr. James Potts.

OFFICES OF THE COMPANY, 11, ELDON-SQUARE, NEWCASTLE-UPON-TYNE.

Applications for prospectuses and shares to be made to the solicitors, and to the following brokers:—Messrs. Warburton and Co., Central Exchange, Market-street, Newcastle-upon-Tyne; Messrs. Tucker, Barnett, and Ellis, No. 11, Birchin-lane, London; Robert Allan, Esq., and Messrs. Pillans and Home, and A. Shiels, Esq. Edinburgh; Messrs. M'Ewin and Auld, Glasgow; Messrs. Reynolds and Sons, and Messrs. D. and J. B. Neilson, Liverpool; Messrs. Alsop and Son, Hull; Messrs. Beaumont and Williamson, Leeds; Messrs. Robertson and Bates, and Messrs. Thomas Cardwell and Sons, Manchester; Mr. J. R. Lane, Birmingham; Messrs. Walmsley, Woodhead, and Co., Bradford; Messrs. Low and Tunstal, Bristol; Messrs. Wm. Moore and Co. Huddersfield; Mr. J. N. Balme, Gloucester; Mr. W. Pollard, Lincoln; Messrs. Warburton and Crossland, Sheffield; Messrs. Halliwell and Davis, Halifax; Mr. T. C. Maynard, Durham; Messrs. Hills and Allason, and Mr. W. I. Barker, Sunderland; Mr. William Davison, Alnwick; Mr. T. Glover, South Shields; Mr. John Hurst, Louth; Mr. Jos. Nelson, Settle; Mr. John Sturrock, jun., Dundee; Mr. James Ross, Perth; Mr. Walter Thompson, Berwick.

FORM OF APPLICATION FOR SHARES.

To the Provisional Committee of the Newcastle-upon-Tyne, Edinburgh, and Direct Glasgow Junction Railway, with a Branch by the North Tyne to Hexham.

Gentlemen,—I request that you will allot to me shares, of £20 each, in this company, and I undertake to accept the same, and to pay the deposit thereon, or upon any less number that may be allotted to me; and I also undertake to execute the Parliamentary contract and subscribers' agreement when required.

Name in full .....
Residence .....
Trade or profession (if any) .....
Place of business .....
Reference .....
Address of referee .....
Date of application .....

ALLOCATION OF SHARES.—The committee of management have now the satisfaction to inform the subscribers and the public, that the Plans, Sections, and Books of Reference of this undertaking have been completed, and deposited, in compliance with the Standing Orders of the two Houses of Parliament, which will enable them to apply for an Act in the ensuing session; and as none of the other lines projected to Hawick (including the London and Edinburgh Direct and Darlington and Hawick Junction Railway), have lodged their Plans and Sections, in conformity with the Standing Orders, this company is, therefore, the only one in a position to apply to Parliament in the ensuing session for powers to make a railway by the midland route to Edinburgh and Glasgow. The committee have also much pleasure in stating, that the result of their surveys is such as completely to answer the objections which have been made to their line in various quarters, and that they are confirmed in the opinion which they at first held, that the line would be of easy formation, and that the tunnel through the Carter would not exceed one mile and a quarter in length. And they hereby give Notice, that no application for shares will be received after the 15th of December, and that the allotment will be made as soon after that date as possible.

By order, CHARLES ATTICUS MONCK, Chairman.
Offices of the Company, JAMES POTTS, Secretary.
11, Eldon-square, Newcastle-upon-Tyne, Dec. 3, 1845.

AT A MEETING of LANDOWNERS, held November 10, 1845, at Belsay Castle Inn, the following RESOLUTION was adopted:—

We, the undersigned, landowners on and near the line of railway proposed to be made by a company calling itself the Newcastle-on-Tyne, Edinburgh, and Direct Glasgow Railway, with a branch to Hexham, having considered the proposed line, and explained with Mr. Monck, the chairman of the managing committee of the said railway company, are of opinion that the proposed line of railway, both in its main line and in its branch, will be beneficial both to the line of country through which it will pass, and to our own estates, in affording the shortest and easiest communication between Glasgow, Edinburgh, and Newcastle-upon-Tyne, and in opening out to use the lime and other minerals which may be now lying unwrought in our lands. We are of opinion, therefore, that the projectors of the proposed line ought to have our consent and support, subject to such reservations in regard to all private and personal interest as is usual in such cases.

Belsay Castle Inn, Nov. 10, 1845.

(Signed) JOHN E. SWINBURNE.
CHARLES M. L. MONCK.
THOMAS ANDERSON.
THOMAS ATKINSON HARLE.
JOHN FORSTER.
W. D. DENT.
P. G. ELLISON (for Ralph Bates, Esq.)
J. S. OGLE.
THOMAS JAMES.
E. C. ASKEW (for Self and the Misses Davidson)
RALPH CARR.

STEAM TO INDIA VIA EGYPT, MALTA, ITALY, ALEXANDRIA, AND THE PENINSULAR PORTS.

PASSAGE TO BOMBAY, MADRAS, AND CALCUTTA.

The Peninsular and Oriental Steam Navigation Company BOOK PASSENGERS for CEYLON, MADRAS, and CALCUTTA direct, by steamers leaving Southampton on the 20th, and for Alexandria, *en route* to Bombay, on the 1st of every month.

A steamer from Southampton leaves the 1st and 20th of every month for Malta, whence are steamers to Naples, Genoa, Civets Vecchia, three times a month.

STEAM TO CORUNNA, OPORTO, VIGO, LISBON, CADIZ, AND GIBRALTAR.
A steamer leaves Southampton on the 7th, 17th, and 27th of every month. 49

Apply at the Peninsular and Oriental Steam Navigation Company's offices, 31, St. Mary Axe, London, where only passages can be secured throughout.

PILBROW'S ATMOSPHERIC RAILWAY AND CANAL PROPULSION COMPANY.—Completely Registered.

DIRECTORS.
The Right Hon. the Earl of ESSEX, Chairman.
The Right Hon. the Earl of Bessborough | Lieutenant-Colonel Gilliess
G. B. Bolton, Esq. | F. J. Lambert, Esq.
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